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ABSTRACT

A study examined the current actual demand and potential future demand for continuing educational programs in Maine. A 143-question survey instrument (containing questions on respondent social and economic characteristics and the demand for continuing education) was administered to 1,715 adult residents of five Maine regions. Survey responses from the five regions were weighted to obtain a representative sample of adult residents of the entire state. The survey dealt with the following eight aspects of the demand for adult education in Maine: (1) the extent of the demand for participation in continuing education; (2) who wants and who gets continuing education; (3) age, education, and the changing demand for continuing education; (4) subjects, credentials, and ancillary services in demand; (5) preferences for scheduling of continuing education; (6) preferences for types of locations and media of presentation; (7) the intensity of demand measured in terms of what people will "pay" for continuing education; and (8) reasons for the demand for continuing education. (The survey instrument and frequency distributions of responses are appended.) (MN)

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THE DEMAND FOR ADULT EDUCATION IN MAINE

A report submitted to:
Roberta Worrick, Coordinator
Maine Community Service/Continuing Education
Title I-A, Higher Education Act
University of Maine at Orono

TITLE I-A HEA

COMMUNITY SERVICE AND CONTINUING EDUCATION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Prepared by:
The Social Science Research Institute
of the University of Maine at Orono

David Kovenock

April 7, 1978

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FOREWORD

Chronology. TITLE I-A (HEA) - SPECIAL DEMONSTRATION PROJECT ON NEEDS, RESOURCES AND DELIVERY SYSTEMS FOR CONTINUING EDUCATION FOR MAINE'S ADULTS. At a meeting of the Maine Postsecondary Public Service and Continuing Education Association in April of 1976, several of the members identified a need for data related to the interests of Maine's adults in part-time education, and an identification of some of the barriers that mitigate against the attainment of such educational opportunities. The same interest was also expressed by a Portland higher education group. These requests led to: consultation with John Valley and I. Bruce Hamilton of the Educational Testing Service (ETS), among others; and, upon approval by the Maine Title I-A Advisory Council, the identification of the Special Project as one of three priorities in our FY 1977 Annual Plan.

In September of 1976, a Special Advisory Committee for the project was formed, which met and defined the purpose and gave valued guidance on the procedures to be followed. At a meeting held on October 29 at the University of Maine at Orono, 33 continuing and adult educators from across the state met to give further definition to the objectives of the project. Five proposals--one from each region--were received and recommended for support by the Title I-A Advisory Council on April 11, 1977.

Activity. The goal of the project was defined by its full title: "Special Demonstration Project: Needs, Resources and Delivery Systems for Continuing Education for Maine's Adults." Its Purpose:

1. To identify needs of Maine's adults for continuing education services, especially those that are not being met.

2. To identify barriers that prevent Maine's adults from obtaining adequate continuing education services.

3. To promote a coordinated response from all of Maine's education services toward seeking solutions to the problems identified.

4. To establish an on-going system of assessment of the needs for continuing education services for Maine's adults.

The total project is designed to consist of three phases spanning a period of three years (FY's 77-79):

Phase I: Needs Assessment
Phase II: Inventory of Resources
Phase III: Demonstration and Implementation

Phase I consists of five regional projects each of which has two parts: a required "core data" collection and an optional activity related to our expressed priorities of "Employment" and/or "Government." The "core data" collection actually goes beyond merely surveying adult educational interests and barriers related only to the designated priorities, and documents the broad educational interests of Maine's adults. A single instrument was used and a single contractor (Social Science Research Institute, UMO) was selected by bid to carry out the survey process in all regions. The resulting regional data will be

disseminated by the grantee in each region, at a meeting to be called for that purpose, as well as through a printed report.

The Title I-A State Agency has collected the regional results and, through the same contractor, produced this summary for the entire state. A consultant has been selected to produce a summary report, which will also be made available through a printed publication and a public meeting planned for that purpose. This will be a Title I-A State Agency function, separate from project funds.

Phases II and III will be shaped more fully: by the experience with Phase I; and by such unknowns as the Federal appropriations for FY's 78 and 79 and the regulations being written for Title I-A in implementation of the Education Amendments of 1976. The opportunity to carry out demonstration projects that may be based on information generated by Phases I and (to a lesser degree) II is of particular interest to those who are taking part in the project.

The instrument that was selected for use in Phase I was designed by ETS and used in 1972 for the national "Survey of Adult Learning" carried out by the Commission on Non-Traditional Study. This study later was used as the basis for publication "Planning Non-Traditional Programs," by K. Patricia Cross, John Valley and Associates. The modified and briefer version we adapted was used in a California "Feasibility Study" prepared for the California state legislature in 1975: "Postsecondary Alternatives to Meet the Needs of California's Adults," by Richard Peterson and JB Lon Hefferlin. Modifications of the same questionnaire were included in an Iowa study and report in 1976. Data generated in Maine by use of this instrument may, therefore, be compared with that collected in one national and two state surveys.

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ACKNOWLEDGMENTS

From Maine Community Service and Continuing Education
(Title I-A, Higher Education Act)

The Title I-A, HEA Special Project is indebted to the many people who contributed their time and assistance. Without their special talents and contributions, an effort of this magnitude within less than two years would not have been possible.

Thanks are especially due to those who assisted directly in the conduct of the project: Austin E. Bennett, Community Development Specialist, Cooperative Extension Service, University of Maine at Orono, Principal Consultant, for his invaluable guidance and expertise in extension education and related studies; Dr. John Valley and I. Bruce Hamilton of Education Testing Service for their advice and encouragement from the very earliest stages; John Adams, Community Service and Continuing Education, U.S. Office of Education, for his help in designing guidelines for proposal submission; Mr. F. Philip Dufour, Director, Sponsored Programs Division, UMO, for his advice in the planning and organizing of the survey; and to the Regional Project Directors: Patricia Solotaire, Director, Allagash Environmental Institute, University of Maine at Portland-Gorham; Philip R. Day, Jr., Director of Academic Planning and Institutional Research, University of Maine at Augusta; William J. Phillips, Associate Professor of English, Bangor Community College; Kenneth H. Walker, Director of Continuing Education/Summer Session, University of Maine at Machias; and Vernon R. Lindquist, Director of Special and External Programs, University of Maine at Presque Isle; who acted as a planning and coordinating committee throughout. Dr. Kenneth Hayes, Professor of Political Science and Acting Director of Social Science Research Institute, UMO, 1976-77, gave important advice in the process of designing the instrument.

Particular thanks go to the members of the Maine State Advisory Council for Title I-A, who had the faith and foresight to recommend financial support by the State Agency, the University of Maine at Orono. Members at that time were: Ms. Marion Bagley, Career Education Consultant, State Department of Education; John P. Biober, Town Manager; Ms. Jean Hight Childs, Member at Large; Theodore S. Curtis, Jr., State Senator; Ms. Wolcott R. Dunham, Member at Large; Roger Garrison, Director of Special Programs, Westbrook College; Lawrence P. Greenlaw, Jr., State Representative; Robert Kany, Director of Special Programs, Colby College; Richard W. Michaud, Director, Bureau of Maine's Elderly; Frank Peters, President, Husson College; and Robert York, Professor of History, UMPG.

The following members of the Special Project Advisory Committee gave willingly of their time to provide guidance on structural and methodological issues; Stanley L. Freeman, Jr., Professor of Education, UMO; Charles J. O'Leary, Director, Bureau of Labor Education, UMO; Kathryn H. Godwin, Director, Bureau of Public Administration, UMO; Robert York, Professor of History, UMPG; Carroll R. McGary Acting Dean of Adult Education and Community Services, UMA; Kenneth T. H. Brooks, Director, Cooperative Education Program, UMPG.

Special recognition goes to my secretary, Mrs. Marilyn Shottafer, who assisted with all the many tedious details like: telephone calls, planning meetings, researching and indexing relevant materials.

Refinement of the survey instrument and method was greatly assisted by several telephone consultations with Richard Peterson of the California office of Educational Testing Service. Other ETS staff people kindly gave permission for use of their copyrighted material and in every way have given friendly encouragement to our modest efforts.

Thirty-three men and women practitioners and planners of public school and continuing higher education for Maine adults gave valuable input to the determination of focus and design by attending an all-day meeting and discussion in October of 1976. Without their demonstrated interest, the study could not have been justified. Group discussion leaders that day were Austin Bennett, Stanley Freeman, and Jean Hight Childs.

Our special thanks go to Gene Kasper, Title I-A Coordinator, Kansas, for the use of "Appraisal of Interest in Continuing Education Opportunities Among Kansas Adults" by Donald P. Hoyt; Robert E. Williams, State Administrator, Title I-A, for several regional reports of studies done in New York state; Allan Rodeheffer, Title I-A Coordinator, North Carolina; John Powers and Andy Maloney of the South Carolina Title I-A office; for their advice and support. Special mention should also go to I. Bruce Hamilton for "The Third Century: Postsecondary Planning for the Non-Traditional Learner: and to Richard E. Peterson and JB Lon Hefferlin for "Postsecondary Alternatives to Meet the Educational Needs of California's Adults."

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To all these people, and many more, our sincere thanks.

Roberta Worrick

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I. INTRODUCTION

> Education is like 'Cracker Jack': The more you've had the more you want. You get into it when you're young, and you're at it for life. It's a continuing thing.

This report, and the 1977 state-wide survey on which it is based, were commissioned for the purpose of ascertaining the "needs of Maine's adults for continuing educational programs." However, because we have imposed no external criterion of "need," because we have allowed citizens to define their own "needs," what we have in fact explored is what economists would call the demand for adult education in Maine. And, because we have defined "education" as "taking part in any kind of learning activity," but exclude from our analysis the demand for educational programs expressed by full-time students, this study is best defined as an examination of the demand for part-time learning activity--for continuing education--among adults in Maine.

The Purposes of the Study

The primary purpose of this report is to describe two types of demand for continuing education (CE): the current actual demand (as of September 1977), and the potential future demand (in the near-term: up to two years hence).

We begin by estimating the quantity of the current demand, the quantity of the potential near-term future demand, the relationship--and the gap--between the two. (See Section II.) We then examine the socio-economic and demographic characteristics of current and of near-term potential 'customers' for CE (see Section III). Using those data, we go on to develop some very preliminary and conservative estimates of the demand for CE ten years hence (Section IV).

But this report devotes less attention to the quantity of demand for continuing education than to the qualities of that demand. We present a great deal

of data on the subject matter of the CE activities in which Maine adults are currently engaged and those in which they would like to partake in the near future, as well as on the types of educational credentials and the ancillary CE services which they would like to obtain (Section V). In Section VI we explore citizens' views as to the most appropriate locations and methods of presentation, and in Section VII their preferences for the scheduling, of the CE activities in which they would most like to participate. We conclude our analysis of the quality of the demand for CE by attempting to estimate the 'costs' people are willing to bear in carrying on their continuing education: the time, travel-distance, and direct dollar 'prices' they are apparently willing to pay for CE (Section VIII).

Thus, our primary purpose is to report the who, the what, the where, the how, the when, and the what price of the demand for continuing education in the state. And, to the extent that our data are sufficient to pursue multi-variate analysis, we whall investigate the interrelationships among several of the dimensions of the quality of CE demand. For example, we attempt to answer such questions as Who wants what kind of CE? What is desired where--and when? What prices are citizens willing to pay for which kinds of CE?

A secondary purpose of this report is to explain the demand for continuing education in Maine, to elucidate the "whys" of that demand. Thus, in Section IX we attempt to answer such questions as: Why are some Mainers currently participating in CE while many others are not? Why do many Mainers look forward to participating in CE in the future--while many others do not? In exploring the whys of the demand, we can test several hypotheses which purport to explain why people continue their education. For example, is participation in CE, like the consumption of consumer services, largely dependent on an ability to incur the opportunity costs--in time, distance, and dollars--of such participation? Or is "dining at the cafeteria of continuing education" like eating 'Cracker Jack': "the more you eat the more you want?" And how much empirical support exists for

the hypothesis that desire for CE is literally a life-long thing for most Mainers?

In gathering the data, in designing the analysis, and in writing this report, several likely uses of the entire research effort have been kept in mind.

First, our work could assist both the consumers and the providers of CE services to bring the supply of such services into better near-term balance with the demand for them. That is, we presumed that our data would signal ways in which providers could immediately modify the quantity, the quality (including the what, the where, the how, and the when), and the price (including the time and travel demands, as well as the fee structure) of their CE offerings in order that those providers could better attain their immediate institutional goals.[1] On the other hand, current and potential future consumers of CE could benefit from the study in the important sense that hitherto unknown aspects of their preferences for CE, whether subject matter, location, teaching method, and/or scheduling, as well as of the time, distance, and dollar 'prices' they were able and willing to pay for CE, would be transmitted to, and presumably acted upon, by CE providers.

Second, research on the demand for CE in Maine could assist the funders and coordinators of existing CE providers, the providing groups themselves, and possible future providers, in adjusting the long-term supply of CE services in Maine to estimates of the long-term demand. For example, confirmation of both the 'Cracker Jack' and 'life-long learning' hypotheses concerning CE demand would suggest enormous future increases in the demand for CE. Such a finding would presumably stimulate timely, orderly, and economical increases in capital and other infra-structural investments in CE capacity.

Third, we have organized our analysis mindful of the possibility that our report might be used in planning public policy at the state and perhaps local

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[1] Footnotes will be found at the end of the Section.

(if not the national) level. Some of this planning would consist of the kinds of decisions, involving either short-term adjustments in supply or commitments of public capital for long-term CE expansion, to which we have alluded above.

But our research and reporting might be useful to public policy-makers in yet other ways. Continuing education is a public good in at least two senses. It is a public 'good' in that the overwhelmingly dominant American value system considers education, including what we define as 'continuing education', as 'good'--both as an end-in-itself and as a means for attaining other goals--such as more useful job skills, increased employment, higher personal and governmental incomes, heightened citizen participation in politics, better-trained governmental personnel, and more adequate national security. Precisely because CE is a public good in this sense it is a public good in the additional sense that many CE offerings and services are either directly provided or are subsidized by public agencies, presumably at the expense of all of us in our roles as taxpayers.

Thus it is that in these days of heightened sensitivity to the equality of availability of both public 'goods' and of 'public goods' to all citizens--and, particularly, to previously disadvantaged groups, public agencies might be interested in data which would assist them (a) in increasing the consumption of at least selected types of CE activities, e.g., public health and first aid, by all sectors of the population; (b) in increasing certain types of CE opportunities among selected groups in the population (e.g., job training or re-training for school drop-outs or those with skills in great surplus); and (c) in equalizing access to all CE services by traditionally disadvantaged groups or by others disadvantaged in access to CE primarily by the location, method of presentation, scheduling, and/or 'costs' of existing CE services. Hence, in describing and attempting to explain the distribution of current participation in CE, the level and character of future demand for CE, and the barriers which many Mainers see

as standing in the way of their participation in CE, we have paid particular attention to a number of traditionally disadvantaged groups--the poor, the unemployed, the aged, Franco-Americans, women, as well as to groups that might be disadvantaged largely as a result of the existing system for distribution of CE (e.g., those living in far Northern and Eastern Maine, in small towns, and/or with job or home responsibilities which are seen to be in conflict with the existing scheduling of CE activities).

These, then, are the purposes of this report and some of the uses to which it might be put.

The Sources of Data

The Adult Educational and Educational Media Interests Survey (the "CE Survey") conducted by the Social Science Research Institute (SSRI) during the summer of 1977, is the source of virtually all the data employed in this report. The Survey was jointly sponsored by Title I-A of the Higher Education Act and the Maine Public Broadcasting Network (MPBN). The University of Maine at Orono is the Maine State agency for administration of the Title I-A funds, a function the University performs through the Community Service and Continuing Education program (CS/CE). The state and five intra-state regional directors of CS/CE, along with several consultants to the state director, joined with members of the SSRI staff in planning those sections of the survey instrument and data analysis which deal with continuing education.[2] Refinement and execution of the research plans have been SSRI's responsibility.

This report, one of six devoted to description and analysis of the Survey's data on continuing education,[3] deals almost exclusively with state-wide sample data. Each of the other five reports presents the data for one of the state's five CS/CE regions, and does so in a fashion that generally matches the outline

(if not the length) of this state-wide report.

The five Maine CS/CE regions are: (I) Aroostook County, (II) Washington County, (III) Hancock, Penobscot, and Piscataquis counties, (IV) the nine-county Central Region, and (V) Cumberland and York counties.

The Survey Instrument

The instrument employed in the CE Survey contains 143 questions. Of these, 82 were designed primarily for analysis of the demand for continuing education, 48 were included largely for the interests of MPBN, and the remaining 13 questions, which deal with the social and economic characteristics of the respondent, are of essentially equal importance to CS/CE and MPBN sponsors.

A copy of the survey instrument, with the distribution of responses to each question inserted, may be found in Appendix A of this report.

Data in addition to those collected directly through the interviews have been associated with each survey respondent:

First, we have utilized respondents' answers to questions in the survey instrument to construct additional, summary variables. For example, a variable labelled 'Time' summarizes a respondent's replies to three questions in order to indicate whether he/she had one or more time commitments that would hinder if not bar participation in continuing education. In similar fashion, a 'Distance' variable tells us whether a respondent perceived that he/she was either geographically isolated from--and/or would encounter problems in obtaining transportation to--the perceived sites of CE opportunities.

Second, we have added what are called 'contextual variables', bits of data about the environment in which each respondent lives. For example, each respondent can be associated with the town or city, the county, and the region in which he lives--and thus with the population size (and, potentially, with any other known characteristics) of those communities.

The Sample

The sampling schema for the CE Survey was specially designed to permit inferences to be drawn about the adult populations of both the state as a whole and of each of the five CS/CE regions, even though two of the regions are relatively thinly populated.

The state-wide sample has been constructed from five regional samples, each drawn by a combination of modified probability and quota techniques. The design provided for the selection of a total of 1,800 respondents who were year-round residents of the state and 18 years of age or older: 300 from the Aroostook County region, 300 from the Washington County region, 400 from the Hancock-Penobscot-Piscataquis counties region, 400 from the Central region, and 400 from the Cumberland-York region.

Within each region, respondents were chosen in the following fashion. First, since interviewing was to be carried out within 'clusters' (rural road segments or portions of city blocks) of 20 households each, the appropriate number of clusters for that region was determined by dividing the region's sample size by 20. The region's municipalities were then grouped into four 'strata' based on their (1970 U.S. Census) population size, and each stratum assigned a number of clusters based on that stratum's proportional share of the regional population. The clusters within a stratum were then assigned to the municipalities within that stratum, with the probability of a municipality being assigned one or more such clusters proportional to the population of that municipality. The specific site of a municipality's cluster(s) was then chosen, with each household within the municipality given a roughly equal chance of being included within a cluster. At each cluster site a starting point was selected on a random basis, and a route for the interviewer to follow was specified. Interviewers were instructed to call at 20 households in a cluster, and to

select no more than one respondent per household. Five respondents were to be males 18-44 years of age, five were to be females in that age category, five were to be males 45 years of age or older, and five were to be females 45 or older.

Thus, representative samples of moderate size exist for each of the five regions. At the same time, by weighting each survey response from a given region with a constant numerical multiplier, we have constructed a representative sample of adult residents of the entire state, with the survey respondents from a given region together representing a proportion of the state-wide sample equivalent to that region's share of the total state population.

A state-wide total of 1,797 personal interviews were conducted by SSRI interviewers at the homes of respondents during the period mid-July through mid-September 1977. Note, however, that 82 of the 1,797 respondents identified themselves as full-time students, and that except where otherwise noted, these 82 students have been excluded from the data presented in this report. Thus, the overall state-wide ('non-student') sample on which this report is based numbers 1,715 weighted cases.[4]

The Limitations of the Data

Our purpose in describing the sample design, the procedures employed in the interviews, and the CE survey instrument itself is of course to help the reader assess the accuracy, the validity, and the utility of the data presented in this report. To assist in this evaluation we offer several observations concerning the possible limitations of our data.

Of Truth, Time, and Relevance

Our analysis assumes that respondents in the CE Survey have been honest with themselves--and with SSRI interviewers. That is, we begin with--and only occasionally pause to question--the assumption that the former gave candid answers to the

questions asked by the latter.

Our concern here is not so much with the truthfulness of responses to questions about such presumably sensitive matters as family income. The experience of survey researchers in this country is that the overwhelming majority of Americans are extraordinarily candid in relating the details of their backgrounds to strangers filling widely-recognized, non-threatening, and accepted social roles, e.g., 'the interviewer'. When quizzed about matters as sensitive as family income, the cautious tend to refuse to answer rather than to prevaricate.

Rather, in the context of the CE Survey we were initially more concerned with the truthfulness of the responses we would get to seemingly harmless but important questions: those dealing with tastes for additional education. Most humans try to please others--including interviewers. Education, as we have noted, is a public 'good'; it's something one is supposed to value and to pursue. Thus, one might expect that when asked whether he/she "would like to take part in some form of further learning activity" (i.e., in a socially approved activity), some respondents would provide the socially approved answer they believe the interviewer wants them to give--"yes"--when, if they were to be completely truthful about the matter, those respondents would indicate indifference or respond with a "no."

The results of the CE Survey assuage somewhat our fears of an inherent 'pro-education' bias in the Survey's content and context. First, a majority of respondents did not claim to be participating in CE or to want to do so in the future (see Section II). Second, virtually all of those who said they were interested in participating indicated an ability (and, hence, at least an abstract willingness) personally to bear at least some of the 'costs' (time, travel distance, and/or money) of such participation (see Section VIII). Of course, these results neither prove that all respondents were utterly candid in every response

they gave, nor do they permit us to measure the extent to which we may have overestimated the current or the potential future demand for CE. However, the results do suggest that any upward bias in our CE demand data is probably far smaller than some might fear.

One important limitation of the data is that they are certainly time-bound. The CE Survey was conducted in the summer of 1977; if the Survey were replicated today, it is unlikely that it would produce exactly the same results--or even results only as different as we might normally expect when drawing two samples from the same population.

Why might the demand for CE change through time--and particularly over so short a period as six months? Conclusive answers are not available: we know little about the dynamics of demand for CE. For example, we do not know the extent to which the quantity and quality of CE demand vary seasonally. Our Survey was conducted in the summer. Would demand be higher in the winter? One might predict it would--presumably because, for most of the people of Maine, the opportunity costs of leisure time spent for CE would be lower in winter weather than in summer. Would the 'prices' Mainers are willing to pay for CE vary with the season? For example, would they be more willing to spend time, but less willing to travel, in the winter than in the summer? We would certainly expect the demand for certain CE subject matters to vary seasonally, particularly within the 'recreation' category. Unfortunately, none of the questions about the seasonality of demand can be answered with data from a single season of a single year.

To what extent does the quantity and quality of CE demand change from year-to-year--and over even longer time periods? We do know that the effective nationwide demand for CE grew rapidly during the early 1970s. Enrollment in adult education programs "of all sorts" went from 13 million in 1969 to more than 17 million in 1975, according to the U.S. Department of Health, Education and Welfare.[5] But

we have no comparable figures for the state of Maine. Nor could we find any previously-developed formulae for forecasting future demand for CE. Indeed, to the best of our knowledge, no one has tried systematically to test important hypotheses about the dynamics of long-term CE demand, such as the 'Cracker Jack' and 'life-long-learning' hypotheses. Hence, we explore these and other hypotheses--and use the results to project at least the quantitative aspects of CE demand in the decade ahead.

The CE Survey data are also limited by the appropriateness of the questions included in--and excluded from--the survey instrument, by the way included questions are worded, and, because we did not ask all questions in the interview schedule of all respondents, by the criteria we used to decide which questions to ask of which respondents. To be sure, the survey instrument was designed to maximize relevance, to produce answers to the questions the research group thought were most important. And the survey instrument was extensively pre-tested. But with the benefit of full hind-sight, we must admit that our perspicacity was less than perfect, our planning less prescient than we would have preferred. Thus, while many careful readers will not need the guidance, this report occasionally points out flaws in the items included in the instrument and to gaps caused by our failure to ask some of the included questions of some classes of respondents or to ask other questions of any of our respondents.

The Accuracy of the Data

The purpose of sampling from a population is to be able to make valid inferences about--to generalize to--the entire population without having to bear the costs of obtaining information about everyone. The validity of those inferences is a function of the accuracy of the sample--which, in turn, is a function of the size of the sample drawn and the quality of the sampling and interviewing procedures. Other things remaining the same, the larger the sample

size the more valid the inferences. The standard of quality is the 'strict probability' sample (every member of the population has exactly the same chance of being selected into the sample) with a '100% response rate' (the appropriate information is gathered from 100% of the respondents sampled). Other things remaining the same, the closer the procedures to these standards the more valid the inferences that can be made from the sample data.

But the costs of interviewing are high. For the highest quality sample designs, interviewing costs are nearly a linear function of sample size. For example, the total costs of interviewing 3,600 respondents is almost twice that of interviewing 1,800. However, the accuracy of a sample does not increase linearly with its size. Other things remaining the same, a sample of 3,600 is more accurate than a sample of 1,800. But it is considerably less than twice as accurate and considerably less than twice as likely to be of a given level of accuracy.

For a sample of a given size, increasing the quality of the respondent selection procedures can become enormously expensive as one moves close to the standard of the ideal. Indeed, it is for any practical purpose impossible to carry out a 'perfect' sample survey of <u>any useful size</u> (among other reasons because some people selected in the sampling will refuse to be interviewed) or of <u>any size</u> in a population as large and mobile as that of a community of more than a few thousand people. (With increasing size it becomes increasingly difficult to be certain that every member of the relevant population has an equal chance of being selected.)

Hence, in designing the sampling, respondent selection, and interviewing procedures it is always necessary to make trade-offs. These trade-offs involve, on the one hand, sample size and the quality of the procedures (and, hence, the likely accuracy of the sample), and on the other hand the time and money to be

invested in carrying out the design. The design of the CE Survey was no exception to this rule.[6]

Therefore, it should be no surprise that there are discrepancies between estimates of state population characteristics made from the CE Survey data and other estimates of those characteristics, discrepancies which are larger than can be plausibly explained solely by the fact that the CE Survey data are based on a sample. To the best of our knowledge, the largest and (given the subject and results of this study) the most important of these discrepancies concerns the formal educational attainments of the state's population. In brief, 18.8% of the CE Survey respondents reported having completed at least three years of college. The presumably parallel 1970 U.S. Census figure for Maine is only 10.3%. To be sure, the Census data were collected in 1969, the CE Survey data in 1977. And, because of the inverse relationship between Mainers' ages and their formal educational attainments, and the positive relationship between recency of residence in the state and education, we would expect a higher proportion of adult citizens interviewed in 1977 to have had three or more years of college than was the case in 1969.

However, we have concluded that most of the discrepancy between the 1970 Census and 1977 Survey figures is probably due to factors other than normal sampling error in the latter (see below) and 'actual change' in the population between 1969 and 1977.[7] Therefore, it is likely that the CE sample has a high-education bias. That bias is unfortunate. For, as we shall see, the demand for CE is strongly and positively associated with the formal educational attainments of Mainers. Thus, it is appropriate that we call readers' attention to the possible impacts, on sample estimates of the demand for continuing education, of the Survey's overrepresentation of citizens who have experienced many years of formal education.

Allowances for Sampling Error

The substantial size of the Continuing Education Survey's state-wide sample, and the smaller but not insignificant sizes of each of the five regional samples, suggest that the findings described in this report are reasonably close to what they would have been had we interviewed every adult in the state, rather than a sample of adults, during the summer of 1977.

However, the reader should bear in mind that each figure reported for a sample is only our best estimate of the correct figure for the entire population from which the sample was taken. Any sample-based estimate of the incidence of a given characteristic in a population as a whole is very likely to differ at least marginally from what the 'real' incidence is. (This is true even if the sample is drawn by strict probability techniques, the respondent-selection and interviewing procedures are designed and executed to perfection, and a 100% response rate is attained.)

Thus, every figure--estimate--we report is subject not only to the possibility of inaccuracy of the type discussed above, but to sampling error--the difference that may exist between the figure obtained by interviewing samples of the state and regional populations and the figure which would have been obtained if the entire population of Maine adults (non-students) had been interviewed. Measures of sampling error do not tell us how much a sample estimate differs from the figure for the entire population. That difference could be known only if the entire population had indeed been interviewed--in which case we would not have to worry about sampling error! Rather, one ought to think of sampling error as the amount of 'space'--or the interval--which ought to be allowed around a sample estimate if we are to be quite certain that the figure for the entire population falls somewhere within that interval.[8]

Since almost all of the sample estimates presented in this report are

expressed as percentages, the sampling error allowances are expressed as the number of percentage points that ought to be added to--and subtracted from--a given estimate if the reader wants to be quite certain that the resultant interval around the estimate includes the 'real' figure for the entire population.

The size of the sampling error varies with the size of the sample and with the magnitude of the percentage estimate. Other things remaining the same, the larger the sample, the smaller the sampling error (i.e., the narrower the interval that must be allowed around the estimate). And the closer the percentage estimate to 50% (rather than to 100% or to 0%), the larger the error (i.e., the wider the interval that must be allowed). The size of the error--the width of the interval--we should allow for also depends upon how certain we want to be that the 'real' figure for the entire population (if we knew it) would lie somewhere within the interval allowed. The more confident we want to be that the population figure falls somewhere within the interval allowed, the wider the interval that must be allowed, i.e., the greater must be the allowance for sampling error.

For the purposes of this report, we have chosen a 95% confidence level. That is, we want at least 95% of the estimate intervals to include the 'real' figures for the entire population.

Table I-A lists the sampling error percentage allowances for CE Survey samples of varying sizes and for different estimates (sample percentages). It is easy to use that table to delimit the intervals that ought to be allowed around the estimates appearing in other tables in this report. For example, Table II reports that 10% of the 1,712 CE Survey respondents who answered Question 2 in the Survey instrument said that they were currently participating in a continuing education activity. Turning to Table I-A, we find that for samples of approximately 1,700, the sampling error for an estimate of 10% is

plus-or-minus (±) two percentage points. So, the interval around the 10% estimate ranges from 12% (10% + 2%) to 8% (10% - 2%). Thus, we can be 95% certain that if all adult (non-student) residents of Maine had been asked Question 2 in the summer of 1977, no more than 12%, and no fewer than 8%, would have reported that they were participating in a CE activity.[9]

In many instances, however, the reader will be interested in allowing for sampling error when two sample estimates are being compared. That is, one may wish to know whether a Survey data-suggested difference between two groups (or two regions, or between one group or region and the state as a whole) actually existed in the summer of 1977, or whether the apparent difference might simply be the result of sampling error. That is, we want to determine the statistical significance of the difference between two percentage estimates found in this report.

Table I-B lists the allowances that should be made for sampling error when ascertaining whether the apparent difference between two sample estimates is statistically significant. The allowances are calculated for samples of various sizes and for sample estimates that are near 50% and near 80% or 20%.

Use of Table I-B is quite straight-forward. Suppose that, when examining Table III-A, the reader wishes to know whether the eight percentage point difference between the proportions of the CE sample's housewives (6%) and its respondents working full-time outside the home (14%) who reported that they were currently participating in CE is large enough for us to be 95% certain that there was, in the summer of 1977, a difference in the CE participation rates of those two groups within the state population as a whole. Table I-B tells the reader that where the percentage estimates involved are around 20% and the two samples involved are approximately 300 and 750, a five percentage-point difference is needed to overcome (at the 95% confidence level) the likely sampling error.

TABLE I-A

ALLOWANCES FOR SAMPLING ERROR (AND CLUSTERING EFFECTS) IN 1977 STATE-WIDE ADULT EDUCATIONAL AND EDUCATIONAL MEDIA INTERESTS SURVEY, 95% CONFIDENCE LEVEL*

Numbers in table are percentage points which should be added to and subtracted from sample estimates of population percentages in order to set 95% confidence intervals around those estimates.

Sample Size (N) on Which Estimate is Based	Where Sample Estimate is Approximately:				
	10% or 90%	20% or 80%	30% or 70%	40% or 60%	50%
1,700	2	2	3	3	3
750	2	3	4	4	4
500	3	4	4	5	5
400	3	4	5	5	5
300	4	5	5	6	6
200	4	6	7	7	7
100	6	8	9	10	10
50	8	11	13	14	14
30	11	14	16	18	18

*The allowances were calculated with Equation (1.1) for sample sizes 50 and 30, i.e., where the number of respondents is less than the number of sample clusters (90) employed in the Survey. They are calculated with Equation (1.2) for all sample ns greater than 90.

$$(1.1) \quad CI_{.95} = \pm 1.96\sqrt{\frac{(\hat{p})(1-\hat{p})}{N_i}}$$

$$(1.2) \quad CI_{.95} = \pm\left[1.96\sqrt{\frac{(\hat{p})(1-\hat{p})}{N_i}} + V_c\left(1.96\sqrt{\frac{(\hat{p})(1-\hat{p})}{N_c}} - 1.96\sqrt{\frac{(\hat{p})(1-\hat{p})}{N_i}}\right)\right]$$

Where:

$CI_{.95}$ = confidence intervals at .95 confidence level;

p = sample estimate (proportion);

V_c = estimated proportion of the variation in the estimate variable which is explained by between-cluster variation (here set at .07, the V_c for Question 3--desire for future participation in CE);

N_i = the sample size (N); and

N_c = the number of clusters (90) employed in the Survey.

TABLE 1-B

ALLOWANCES FOR SAMPLING ERROR IN DETERMINING THE SIGNIFICANCE OF THE DIFFERENCE BETWEEN ANY TWO SAMPLE ESTIMATES OF POPULATION PERCENTAGES, 95% CONFIDENCE LEVEL*

If, given the sample sizes involved, the difference between the two sample percentages being compared is not greater than the number of percentage points in the table below, then we cannot be 95% certain that the difference in the sample represents a real difference between the two populations being compared.

Approximate Sample Size (N) on Which One % is Based	Approximate Sample Size (N) on Which the Other % is Based									
	1,700	750	500	400	300	200	150	100	50	30
	For Percentages around 50 Percent									
1,700	3	4	5	5	6	7	8	10	14	18
750		5	6	6	7	8	9	10	14	18
500			6	6	7	8	9	11	14	18
400				7	7	8	9	11	15	18
300					8	9	10	11	15	19
200						10	11	12	15	19
150							11	13	16	20
100								14	17	20
50									20	23
30										25
	For Percentages around 80 or 20 Percent									
1,700	3	3	4	4	5	6	7	8	11	14
750		4	4	5	5	6	7	8	11	15
500			5	5	6	7	7	8	12	15
400				6	6	7	8	9	12	15
300					6	7	8	9	12	15
200						8	8	10	12	15
150							9	10	13	16
100								11	14	16
50									16	18
30										20

*The formula from which these allowances were calculated may be found in Raymond H. Myers and Ronald E. Walpole, Probability and Statistics for Engineers and Scientists (New York: Macmillan Company, 1972), pp. 206-208.

Since the five-point allowance is less than the eight-point difference in the sample estimates, we can say that across the state, housewives were significantly less likely than Mainers working full-time outside the home to be participating in CE in the summer of 1977.[10]

Thus, whenever the text of this report indicates that the difference between two groups with respect to some sampled attribute is "statistically significant," we mean that the difference between the sample estimates of the incidence of that attribute in the two groups is greater than the sampling error allowance indicated in Table I-B. On the other hand, when we say that Maine adults differ significantly from one another with respect to some attribute (A_1) according to their classification with respect to some other attribute (A_2), e.g., "Mainers' desire for continuing education varies significantly with their job status," we mean that the distribution of categories of A_1 among the categories of A_2 (the distribution observed in the sample) is not what we would expect if the relationship between A_1 and A_2 were, in fact, random. Here we are employing the chi-square ($\underline{x}^2$) measure of the probability that the relationship between A_1 and A_2 could have occurred by chance. Unless otherwise indicated, a significant difference is one that could not have occurred by chance in more than five samples out of every 100 drawn (i.e., a difference significant 'at the .05 level').[11]

Availability of the Survey Data

This state-wide report and the five regional reports issued to supplement it together fall far short of exhausting the analytical opportunities provided by a set of data as rich as that produced by the 1977 Maine Adult Educational and Educational Media Interests Survey. Those interested in further analysis of the data should note that the Social Science Research Institute will respond to requests that it provide secondary analysis of the Survey data and/or provide copies of that data and of its documentation. All such requests should be addressed to the Institute's director.

NOTES ACCOMPANYING SECTION I

[1]This would be the case whether the providers' goals were to maximize (1) the number of citizens served or (2) the numbers served within a fixed budgetary constraint--whether with one specific type of CE service (e.g., vocational training in the building trades) or across a full-range of CE subjects; (3) their gross income from--or the size of their budget for--provision of CE services; (4) their net income from the sale of CE services; (5) their total rate of return on resources invested in CE; etc.

[2]Substantial portions of the CE section of the instrument were adapted from an instrument developed and copyright by the Educational Testing Service.

[3]SSRI Reports 8007-8 through 8007-13. Reports 8007-1 through 8007-7, prepared for MPBN, deal with the public television-related questions in the Survey.

[4]The weighted state-wide sample is based on 1,713 actual interviews. Because the weighted sample n is essentially the same as the unweighted sample n, we list and employ the former in this report. (Had the former been substantially larger than the latter, such a practice would have been misleading.) However, because by design the weighted n differs substantially from the unweighted n for most of the regional samples, unweighted regional ns are listed in the relevant tables in this report.

[5]See The Wall Street Journal, January 13, 1978, p. 1.

[6]The major trade-offs in quality employed to reduce time and dollar costs were: (1) employing clusters of 20 respondents rather than of one respondent; (2) employing quota sampling techniques rather than first listing all eligible individuals in all households in the cluster and then drawing respondents' names randomly from that list; (3) limiting 'call-backs' (to find a chosen respondent at home) rather than providing for as many call-backs as necessary to interview each initially selected respondent.

[7]We reach this conclusion after comparing the educational levels of those 40 years of age or older in 1969 (the 1970 Census figures) with those 48 years of age or older in 1977 (the Survey data). The Census indicates that only 9.3% of those 40 or older in 1969 had three or more years of college. However, 15.8% of the CE Survey respondents 48 or older in 1977 (i.e., those who had been 40 or older in 1969) claimed they had at least that level of formal education. The difference between the two figures--9.3% (Census) and 15.8% (Survey)--cannot plausibly be explained by normal sampling error in the latter data (see below). Nor can it be accounted for by the relatively high educational attainments of recent arrivals in Maine, for the CE Survey shows that few such in-migrants have been over 40 at the time of their arrival.

Only three other types of changes in the population could conceivably explain the discrepancy: (1) significant numbers of Mainers 40 or older in the 1970s took sufficient college courses for credit to move into the 'three years or more college' category; (2) out-migration and/or (3) death rates of those 40 or older were very much lower among those with three years or more college than among those with less education. Explanation (3) would seem to be at least plausible. But, while the death rate among those beyond 40 years of age is

inversely related to education, the relationship is weak and could account for but a tiny fraction of the discrepancy between the Census and the CE Survey data on the educational levels of Mainers 48 years of age or older in 1977.

We must conclude, therefore, that the CE Survey estimates of the educational attainments of the state's adult population are somewhat inaccurate, that the CE sample over-represents those with high educational levels, i.e., has a 'high-education bias,' at least in the older age groups. That bias could have been produced by aspects of the sample design and execution procedures employed in the Survey. For example, trade-offs against the stringent model of probability sampling could well have caused citizens with lower levels of education to have had, on the average, something less than an equal chance of being selected into the sample and, hence, to be underrepresented in it. Or, it may be that potential respondents with less education were more likely than those with more education to refuse to be interviewed. Or it may be that respondent selection and interviewing procedures and differential refusal rates are all partially responsible for the bias.

[8]The discussion of sampling error and confidence intervals draws upon Merle Black, David M. Kovenock, and William C. Reynolds, Political Attitudes in the Nation and the States (Chapel Hill: Institute for Research in Social Science, 1974), pp. 12-16.

[9]It should be emphasized that the percentages in Table I-A provide only for sampling error allowances for 'model' probability samples (strict probability procedures and 100% response rates), with an added allowance for the CE Survey's clustering-effect (CE clusters = 20 cases rather than 1) deviation from the model. Allowances for other deviations from the model (e.g., less than 100% response rate) are not included in Table I-A. Indeed, they cannot be calculated.

[10]In one sense, the allowance for sampling error in this example is generous, that is, larger than need be. The allowance (5%) is for percentage estimates around 20%, while the estimates (6% and 14%) are even 'further' from 50% than is 20%, and, hence, are subject to less sampling error. The Table I-B allowances will also be generous when they are used to test the significance of the difference between percentage estimates for two samples when one sample is a part of the other (e.g., the Aroostook County and state-wide samples). And when the error allowance is generous, a test for the significance of difference between two percentages will be more conservative--more stringent--than is necessary.

In another sense, however, the allowances in Table I-B are less stringent than is required, as the allowances assume that the estimates being compared were derived from 'model' probability samples with 100% response rates.

[11]A "marginally significant difference" is one that could have occurred by chance in more than five--but no more than 10--samples out of every 100 (i.e., a difference significant at the .10 level). Other statistical measures appear in a few places in this report. Their purposes and interpretations are supplied at the appropriate points.

II. THE DEMAND FOR PARTICIPATION IN CONTINUING EDUCATION

The education of Maine citizens does not necessarily end with a high school or a college diploma--or even, necessarily, with an adolescent "dropping out." Nor do Mainers, when continuing their education, necessarily do so as full-time students. When Continuing Education Survey respondents were asked, "Are you now taking part in any kind of learning activity?"[1] (our measure of the current actual demand for continuing education), one in every ten (10%) said that they were (see Table II).[2] Thus, approximately 65,000 Maine adults were part-time participants in continuing education (CE) in the summer of 1977.[3] This finding suggests that there are nearly one-fourth (24%) as many adults currently participating in educational activities on a part-time basis as there are Mainers of all ages formally enrolled in all of the state's public and private educational institutions--from kindergarten through university graduate work.[4]

But if the number of citizens currently participating in CE is large, the number who desire to participate is very much larger. When asked, "Within the next two years would you like to take part in some form of further learning activity?" (our measure of the near-term potential demand for CE), 45% of the Survey respondents gave an affirmative answer (see Table II). Projecting this 45% figure to the state as a whole, we conclude that more than 300,000 adult Mainers want to participate in continuing education--now or sometime in the near future.[5]

To be sure, to tell a survey interviewer that one would like to participate in CE is a lot easier than to pay the opportunity costs--in time and, frequently, in money and physical inconvenience--of actually participating in CE. But, as reported in Section VIII, below, the overwhelming majority of the Survey respondents who desired CE claimed to be willing to "pay" a significant amount--in time, travel, and/or dollars--for the opportunity to participate in it.

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[1]Footnotes will be found at the end of the Section.

TABLE II

DESIRE FOR, AND CURRENT PARTICIPATION IN, CONTINUING EDUCATION IN MAINE; THE RELATIONSHIP BETWEEN THE TWO

		Desire Continuing Education (Q3)			
		Yes	No	Q2 Totals	(N)
Participate in Continuing Education (Q2)	Yes	16%	4%	10%	(166)
	No	84	96	90	(1,547)
		100%	100%	100%	
	Q3 Totals	45%	55	100%	
	(N)	(777)	(935)	(1,712)	

The number of Maine adults who'd like to participate in CE exceeds by roughly 10% the total current enrollment of people of all ages in all of the state's public and private educational institutions. As interesting--and more important for our purposes here--is the fact that there are four and one-half times as many adult citizens who desire CE as there are current participators in CE. Put in other ways--and in terms of the number of people involved, (1) current actual demand for CE is only slightly more than one-fifth (21%) of the potential near-term demand, and (2) Mainers desiring CE outnumber those now participating in CE by nearly one-fourth of a million (239,000).

Of course, some of those counted in the potential near-term demand are among those already participating, and a significant minority of those currently participating apparently do not wish to continue. The relationship between actual current and potential future demand for CE can be expressed in ways apparent--and not so apparent--in Table II. For example, the rate of current participation in CE is four times as high among those who desire CE in the future

(16%) as it is among those who don't (4%). Among those currently participating in continuing education, 75% wish to continue; 25% do not. And classifying survey respondents according to whether or not they are currently participating in CE and whether or not they desire to participate in the future, we obtain:

7.2% are current participators who wish to continue
2.5% are current participators who do not wish to continue
38.2% are not currently participating but would like to start soon
52.1% are not currently participating and do not care to start soon

Clearly, then, a statistical relationship exists between desiring CE in the future and participating in it now.[6] Undoubtedly, there is a significant causal relationship between desiring CE in general and participating in it now. And there may be a causal relationship between current participation in CE and the desire to continue to do so in the future. The data on the actual current and the potential future demand for CE--and their inter-relationship--lead to questions which would be extremely useful to answer. For example: Why do some Mainers (approximately 45% of all adults) desire CE while others (55%) don't? Why, among those who desire CE, are some (16%) currently participating while most (84%) aren't? Why, among those currently participating, do most (75%) desire to continue in the near future but some (25%) don't?

Unfortunately, these questions are at least as difficult as they are useful to answer. Hints as to what the answers may be will emerge as we begin, in Section III, to describe the characteristics of those demanding CE in Maine. Who wants to participate in CE? Who's participating now? And is the CE shortfall--the gap between the desire for CE participation and current CE participation--simply a random phenomenon, or is the gap significantly greater among some groups in the state than it is among others?

NOTES ACCOMPANYING SECTION II

[1]For the full wording and context of this question (#2) and others, see the CE survey instrument reproduced in Appendix A.

[2]The reader will recall that unless otherwise noted, all Survey results reported here refer to the weighted state-wide sample with all full-time students removed.

[3]This projection (P*) from the CE Survey estimate to the adult (non-student) population, and others like it in this state-wide (and in each intra-state regional) report, is obtained with the equation:

$$P^* = \left(\frac{(P)(A)}{N}\right)\left(\underline{n}\right),$$

where: P = the estimated 1977 population of the sampled area (here 1,080,900 for the entire state; see Maine State Planning Office, Statistical Reports [July 1977], p. 2); A = the estimated proportion of the total population which is 18 years of age or older (here .651 for the state as a whole; see U.S. Bureau of the Census, County and City Data Book, 1972 [Washington: Government Printing Office, 1973], p. 222); N = the size of the CE Survey's total sample (non-students and students) for the area in question (here 1,797--the size of the entire state-wide sample); and n = the number of respondents (not full-time students) giving the indicated response to the CE Survey question being projected to the state-wide (non-student) population (here the 166 in the state-wide sample who gave a "yes" response to Question 2--see Table II). By refering to Table I-A we may place confidence intervals around the 65,000 figure. Given that in this case N is approximately 1,700 and the sample estimate (here the percentage saying "yes" to Question 2) is about 10%, we can be "95% certain" that if the entire population of (non-student) adults in the state had been asked Question 2 in the summer of 1977, 65,000--plus or minus 2 percent--of that population would have given a "yes" response. Since our sample estimate of that population is 670,500, and 2% of that number is approximately 13,400, we can be "95% certain" that between 51,600 and 78,400 adult (non-student) Mainers considered themselves to be taking part in some kind of learning activity--in continuing education--in the summer of 1977, and that our best estimate of the actual number is approximately 65,000.

[4]The estimate of total state-wide enrollment comes from U.S. Bureau of the Census, op. cit., p. 223, and Maine Educational Facts, 1975-76 (Augusta: Maine Department of Educational and Cultural Services, n.d.), pp. 1, 5.

[5]Our "best estimate" is actually 304,300 ± 13,400; i.e., the 95% confidence intervals around 304,300 are at 317,700 and 290,900.

[6]The statistical relationship between desire for CE and current participation in it is clearly significant: it "passes" the chi-square test of significance at the .0001 level. However, given that the Phi, Cramer's V and Pearsonian r correlation coefficients are but +.19 in this case, we cannot say that the statistical relationship between desire for and participation in CE is particularly strong. (Note: The Phi and V coefficients may vary from 0.00 (no relationship) through 1.00 (perfect relationship); the r coefficients may vary from +1.00 (perfect positive relationship) through 0.00 (no relationship) to -1.00 (perfect negative relationship).

III. WHO WANTS--AND WHO GETS--CONTINUING EDUCATION?

Table III provides an enormous amount of basic data on the statistical relationships between Mainers' demographic and socio-economic characteristics on the one hand, and their demand for continuing education of the other.

The Nature of the Analysis

There are a number of descriptive questions which may be answered with the data in Table III. For example, we might ask, "What groups predominate (or, alternatively, are rarely found) among those desiring CE and/or currently participating in it?" To answer such questions, we would explore what might be termed the group structure of CE demand. This may be done by examining the data in the Table III columns labelled "% of Total Desiring CE" and "% of Total Participating in CE."

Let us illustrate this kind of structural analysis with reference to the Table III data on the five regions. Those data tell us that an estimated two-thirds of the state's adult citizens interested in CE live in Regions IV and V: the nine central and two most southwesterly counties, i.e., the 11 counties lying southwest of the city of Bangor. By our measures, 68% of the potential demand, and 67% of the current demand, is to be found in those two regions. Observe, too, that residents of Aroostook County comprise only 7% of the current state-wide demand but are 11% of the potential demand, whereas the Hancock-Penobscot-Piscataquis region contains 24% of the state's current CE participators but only 18% of its potential participators.

Such information is interesting descriptively. It might also be useful. For example, if funds were available state-wide for publicizing and/or subsidizing CE opportunities, other things remaining the same, one might want to apportion those funds among the regions according to their share of the state-wide

TABLE III

DESIRE FOR, AND CURRENT PARTICIPATION IN, CONTINUING EDUCATION; THE GAP BETWEEN DESIRE AND PARTICIPATION; MAINE-WIDE AND WITHIN SELECTED GROUPS

% of Non-Student Sample (Weighted)		% Desiring CE	% of Total Desiring CE	% Participating in CE	% of Total Participating in CE	% of Those Desiring CE Who Are Participating in it	(N of all Respondents in Group)
100%	All Maine adults	45	100	10	100	16	(1,715)
	Region						
10%	Aroostook County	54	11	7	7	8	(285)
3	Washington County	40	3	9	3	20	(288)
17	H'cock, Penob., Piscat.	47	18	13	24	21	(377)
40	Nine central counties	46	41	10	43	18	(389)
30	Cumberland & York	41	27	8	24	12	(374)
	Size of town/city						
33%	Less than 2,500	47	34	9	30	14	(561)
18	2,500-4,999	50	20	10	20	18	(317)
17	5,000-9,999	53	19	15	26	23	(283)
20	10,000-24,999	39	18	7	15	13	(351)
12	25,000 or more	36	9	7	8	9	(203)
	Sex						
50%	Men	42	45	10	52	19	(843)
50	Women	49	55	9	48	14	(860)
	Ethnicity						
17%	Franco-Americans	47	18	8	15	12	(284)
	Age						
10%	18-24	72	16	12	12	14	(166)
22	25-34	70	34	18	40	23	(369)
17	35-44	60	22	9	16	11	(283)
14	45-54	45	14	8	12	12	(242)
14	55-64	31	10	7	10	15	(247)
15	65-74	12	4	6	9	9	(252)
8	75 & older	4	1	1	1	13	(139)
	Education						
16%	8th Grade or less	21	7	1	2	1	(273)
15	9th-11th Grade	30	10	5	8	8	(255)
37	12th Grade	48	39	7	27	10	(624)
14	1-2 yrs. Post-high	54	17	10	15	13	(240)
14	3-4 yrs. College	66	20	23	34	30	(240)
4	Grad/professional school	70	7	34	15	43	(73)
	Employment status						
39%	Full-time	57	50	14	59	20	(664)
10	Part-time	56	12	12	12	16	(163)
5	Looking for work	67	7	9	4	10	(82)
26	Retired/disabled	15	9	4	12	13	(442)
20	Housewife	50	22	6	13	9	(331)
	Family income						
11%	Under $3,000	31	7	7	8	17	(151)
12	$3,000-4,999	28	7	8	9	23	(167)
10	$5,000-6,999	46	9	7	7	16	(136)
14	$7,000-9,999	54	16	10	14	13	(203)
23	$10,000-14,999	53	26	9	22	14	(329)
15	$15,000-19,999	56	18	11	16	16	(214)
15	$20,000 & up	56	17	19	25	22	(204)
	(N--approx.)		(777)		(166)		

(unwtd.)

potential demand ("% of Total Desiring CE") rather than their share of the current demand ("% of Total /currently/ Participating in CE") or even their share of the state's population.

When exploring the group structure of CE demand one is tempted to investigate related but nonetheless different questions. For example, that an estimated 68% of the total of those desiring CE in Maine live in the 11 southwestern counties is not surprising; those counties contain the bulk of the state's population. The question then becomes, "Do the citizens of a particular region comprise a larger proportion of the potential demand for CE than we would expect given the current population of that part of the state?" That is, are the people of a region over-represented, proportionally represented, or under-represented among those desiring CE state-wide?

One way to answer this question is to compare the relevant figures under the Table III heading "% of Total Desiring CE" with the corresponding regional data in the left-most column in that table, viz., the column which indicates the percent of all Survey respondents in each of the group categories. There are two regions with meaningful discrepancies. The Aroostook County sample includes 10% of the Survey respondents but 11% of those desiring CE. Cumberland and York county respondents are 30% of the sample but only 27% of those in the sample who desire CE. That is, given their populations and our Survey data, Aroostook citizens would seem to be slightly overrepresented, and those in Cumberland-York slightly underrepresented, among those desiring CE across the state.

But there's a much more straight-forward way to obtain the same kind of information, i.e., information on the CE demand rates within the various groups identified in Table III. We can examine the column labelled "% Desiring CE" and compare each group's potential demand ("desire") rate with the rates for other groups--as well as for the state as a whole. In doing so we immediately confirm what we had already tentatively concluded in a more round-about way: the

potential demand rate is significantly higher in Aroostook County (54%) than it is state-wide (45%), and that rate appears to be slightly lower in the Cumberland-York region (41%) than elsewhere in the state.[1]

The fact that there is a weak statistical relationship between region and potential CE demand does not necessarily mean that there is a causal relationship. After all, it may be that region is statistically related to some third variable x, that x is a cause of variation in CE demand and, hence, that the region-demand relationship is 'spurious'. In Section IX of this report we attempt to determine which variables may in fact be causes of Mainers' desire for CE or the lack thereof.

Data on the current and potential CE demand rates can be used in a variety of ways--devising CE marketing campaigns, for example. One strategy for stimulating participation in CE would concentrate on groups in which the CE demand rate is unusually high. These groups would become the principal targets of the classical marketing approach of reinforcement, of "playing to strength" until the market saturation point is reached.[2] The alternative strategy is to focus attention on those groups in which the CE demand rate is unusually low: to find new markets, to attempt the conversion of the uninterested to active participation in CE.

The groups' rates of potential and current demand for CE can be useful in planning for future changes in CE participation. To the extent that demographic, social, and economic characteristics are causally related to CE demand rates, and to the extent that the distribution of a population with respect to those characteristics is itself changing in ways that are understood and can be anticipated, to that extent it may be possible to forecast future changes in the demand--actual and potential--for CE. In Section IV of this report we

[1]Footnotes will be found at the end of the Section.

use a simple version of this technique to attempt a crude (and very conservative) forecast of the demand for CE ten years hence.

Thus far we have discussed two basic approachs to the data in Table III. They may be used to explore the group structure of (potential or current) CE demand or to examine the (potential or current) CE demand rates within the various groups. But a third type of data is available in the table: the "% of Those Desiring CE Who Are Participating in It." That is, we can measure the "gap" within each group between current participation in CE and the potential demand for CE. By comparing the group gaps with one another--and with the state-wide gap, we might infer the relative degree of CE demand satisfaction across the various groups. For ease of exposition, we call this measure the CE "Demand Satisfaction Index" (DSI). Since 16% of those desiring CE state-wide (see Table III) are currently participating in CE, i.e., the state-wide DSI is 16%, any group in which the corresponding figure is significantly higher may be said to have relatively satisfied demand for CE, and any group with a significantly lower figure a relatively unsatisfied demand.[3] By this standard, and with reference to both the participation-desire gap data in Table III and the Table I-B allowances for sampling error, we can say that, among the five regions of the state, only in Aroostook County is demand significantly less satisfied, and in no one of the other regions is demand significantly more satisfied, than it is state-wide.

To the extent that the equalization of CE demand satisfaction is (or may become) a goal of CE policy-makers, the Survey data on the group-related gaps between the desire for CE and current participation in it may be useful as well as interesting.

We have used the regional data to illustrate the types of analytic questions that may be answered with the material in Table III, as well as some of the purposes to which the resultant answers may be put. We now summarize the balance

of the data in Table III insofar as it addresses the variability, across the demographic and socio-economic groupings isolated in that Table, (1) of potential and/or current CE demand rates, and (2) of the extent to which CE demand is being satisfied (i.e., of the magnitude of DSI scores).

Size of Community and CE Demand

The statistical relationships between demand rates or Demand Satisfaction Index scores and the size of community of residence are complex. The relationships are significant but not very strong, and appear to be more generally curvilinear than linear. Let us explain.

Both CE demand rates and Demand Satisfaction Index scores are lowest in the largest communities, but only the potential demand rate is significantly lower in the cities of 25,000 or more (36%) than it is on the other end of the size continuum--in places of less than 2,500 people (47%). However, both the potential and the current demand rates, as well as the DSI, are significantly lower in the largest cities than in towns of 5,000-9,999 people. Thus, the percentages "Desiring CE," "Participating in CE," and "Desiring CE Who are Participating in It" rise as we examine respondents from the very smallest communities to those in the next largest grouping (2,500-4,999), then rise again to a peak among those in the "middle-sized" towns (5,000-9,999), then decline significantly in communities of 10,000 and over, and then (in two of three cases) decline again in cities of 25,000 or more. In sum, there is a modest curvilinear relationship between the rates and the DSI on the one hand, and community size on the other. Figure III illustrates the point.

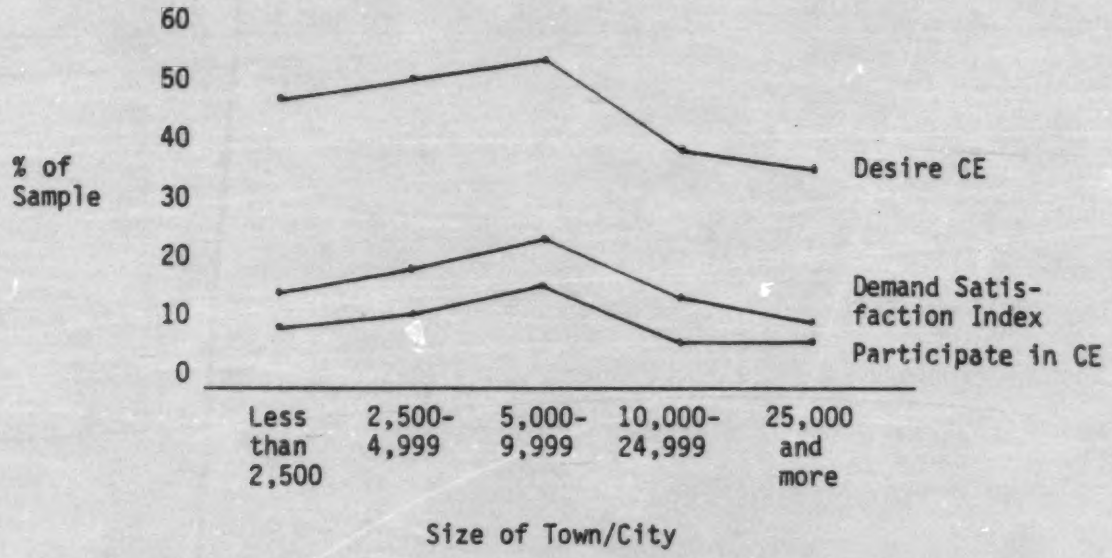

FIGURE III-A: SIZE OF COMMUNITY AND DEMAND FOR CONTINUING EDUCATION

Men, Women and CE Demand

Men and women in Maine are equally likely to be current CE participators, but a significantly higher proportion of women (49%) than of men (42%) desire to participate in the near future. At the same time, women's CE demands are being marginally less well satisfied than those of men: while 19% of the men who desire CE are currently participating in it, the same can be said of only 14% of the women.[4]

The Effects of Ethnicity

If women as a group appear to be slightly disadvantaged in terms of their ability to obtain continuing education, another major grouping which has also traditionally suffered disadvantages in both the public and private sectors would appear not to be in that position today with regard to CE. Franco-Americans, the largest ethnic group in Maine, 17% of our sample, do not appear as a group to differ significantly from the remainder of the state's population with respect to our measure of access to CE (the DSI) or in terms of potential or current demand for CE.[5]

But we should not infer from the Survey data on Franco-Americans that CE demand rates and Demand Satisfaction Index scores do not differ from one ethnic group to another in the population at large. It appears, for example, that the state's small Italian-American group (2% of the population) is significantly more likely to desire CE than the rest of the population.[6] Unfortunately, the appropriately small number of sample respondents identifying as American Indians (n = 9) prohibits statistical treatment of them as a group.

Age and Continuing Education

The relationship between age and the desire for continuing education is statistically significant, negative, and very, very strong.[7] The higher the age, the less interest in CE. Among 18-24 year olds, the portion desiring CE is 72%. That potential demand rate falls almost imperceptably to 70% among those 25-34 years of age, and then quite sharply with each ten-year age grouping. Finally, the rate is only 4% among those 75 years of age and older (see Table III & Figure III-B). The sharpest drop is encountered as one passes from those 55-64 to those 65-74: the percentage desiring CE plummets from 31% to only 12%. The age-CE desire relationship is so strong and negative that those under 35 years of age, comprising less than one-third of our state-wide sample, constitute one-half of all those desiring CE.

The statistical relationship between age and current participation in CE is also significant and negative.[8] Although not so strong as that between age and potential participation, the relationship between age and current CE participation is sufficiently strong that over one-half (52%) of those currently participating are under 35 years of age. However, unlike the age-potential participation case, it is not the youngest adults who are most likely to be participating. Rather, it is those from 25-34 years of age (where 18% are currently involved).[9] This age cohort is only 22% of the non-student sample but contains

40% of those involved in CE. At the other end of the age spectrum, only 6% of those 65-74--and only 1% of those 75 and over--are currently participating. While comprising nearly one-fourth (23%) of our sample, those 65 and over constitute only 10% of those reporting CE involvement in the summer of 1977.[10]

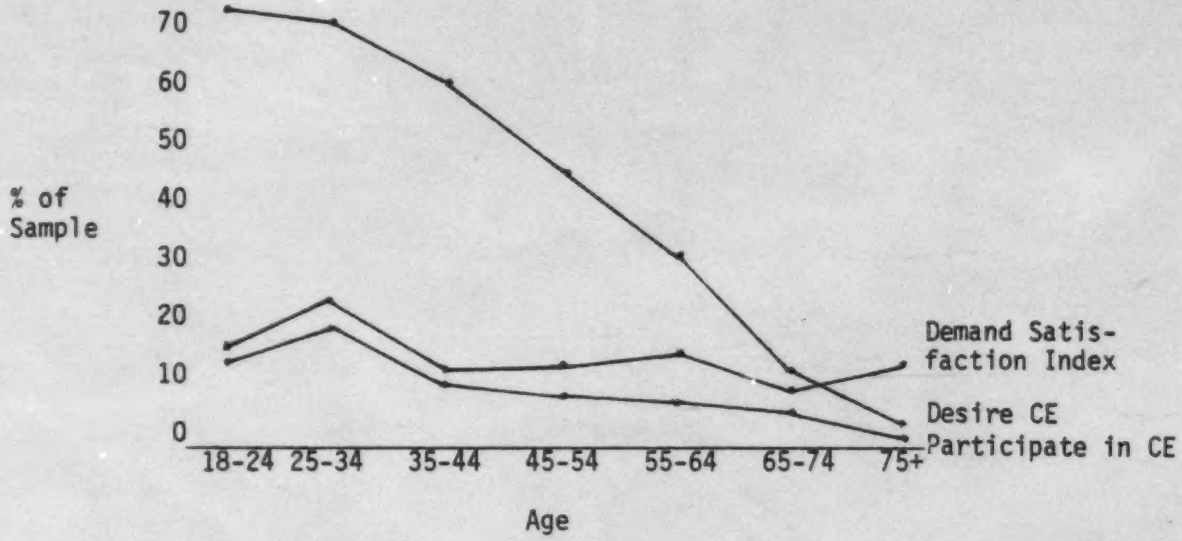

FIGURE III-B: AGE AND THE DEMAND FOR CONTINUING EDUCATION

Thus, potential and current demand are respectively strongly and modestly negatively related to age. Note, however, that there is a statistically significant but only very weak negative relationship between age and our measure of CE demand satisfaction. The DSI scores are significantly higher among those 25-34 years of age than among those of any other age cohort, but none of those other cohorts differ significantly from one another on the Index. So, from what we have learned thus far we cannot conclude that the aged are relatively disadvantaged with respect to CE demand satisfaction.

Clearly, then, age is statistically related to potential and current demand for CE, particularly the former. However, age is itself related to a number of other social, economic, attitudinal (one might even say "psychological") attributes which themselves may be more important "causes" of demand for CE than age itself.

Thus, the Table III data on the age-CE demand relationship tell us that any significant change in the age distribution, (the changing population 'pyramid') ought to be considered in forecasting future levels of CE demand and participation. However, we shall postpone until Section IX an analysis of causal impact of age--and the relative impact of "psychological" as opposed to chronological age--on the desire for, and current participation in, continuing education.

"Traditional" Education and Continuing Education

The term "continuing education" implies that CE is part of a larger, longer process of education, and that CE begins where something else--what might be termed "traditional" education--ends. If traditional education stimulates the demand for continuing education, or if traditional and continuing education share common causal antecedents, then we should expect a significant positive relationship between Maine adults' traditional educational attainments and their demand--current and potential--for continuing education. Further, if the level of a person's traditional education favorably affects his or her ability to bear the costs of participating in CE today, then we should expect CE Survey respondents' traditional educational levels to be positively associated (1) with current participation in CE, and (2) with the ability of those who desire CE to enjoy current participation in it (i.e., with Demand Satisfaction Index scores).

The data in Table III and Figure III-C would appear to lend support to all of these hypotheses. That is, the potential demand rate ("% Desiring CE") increases continuously as one moves from respondents with the most modest to those with the most extensive traditional educational backgrounds. Those with some post-college training are more than three times as likely to desire CE as those who never went to high school (70% vs. 21%). Interestingly, the

largest single jump in the potential demand rate is evidenced as one shifts from those who apparently dropped out of high school (30%) to those who finished high school but took no more formal training (43%). Indeed, the potential demand rate among the latter group is at least as high as that for the population as a whole. And since the high school graduate group represents a hugh proportion of the population (our sample suggests 37% of adult non-students), it is not surprising that among all respondents desiring CE, well over one-half (56%) have a traditional education that ended with high school. In corollary fashion, the traditional educational grouping with the highest CE demand rate (70%), those with post-college training, represents only 7% of those who would like to participate in CE.

The relationships between traditional educational attainment and our measures of current participation and satisfaction of demand are also significant, positive, and quite strong.[12] Notice, however, that the biggest increases in both measures are encountered as one moves from those with one or two years of college (or other post-high school training) to those with three or four years of college. The participation rate of those with at least three years of higher education is so high that they make up nearly one-half (49%) of those currently active in CE while they are only 18% of the entire sample. (The DSI scores of the two top educational groups put them in a class--one is tempted to call it a "CE privileged" class--by themselves.) The curve defining the rise, with rising education, in current CE demand and DSI scores is as nearly "J-shaped" as linear (see Figure III-C). This phenomenon suggests that the factors causing current demand (and demand satisfaction) may be interacting. Perhaps traditional education whets the appetite for continuing education and, where the former reaches well into the college years, leads to occupations, incomes, and residential locations which lower the costs (broadly defined) of CE--or make them easier to bear. It is also possible that the types of CE currently offered are particularly attractive to those who've had some college education, and/or that those with at least some college are attracted to a wider

range of CE offerings than are others.

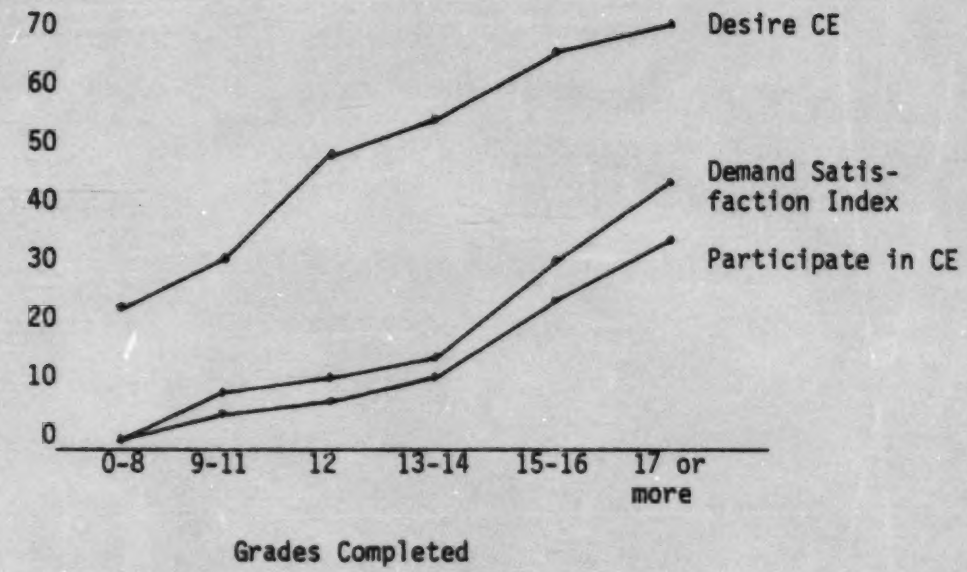

FIGURE III-C: TRADITIONAL EDUCATIONAL ATTAINMENT AND THE DEMAND FOR CONTINUING EDUCATION

In any case, traditional education is less strongly related to desire for CE, but more strongly related to current participation in DSI scores, than is age. Of course, in Maine as in most of the U.S., the average educational level is increasing--as young people with higher levels "replace" the aged, lower education cohorts in the adult population. The link between traditional educational levels and CE demand, and the increasing educational levels of the adult population, suggest that there will be a near- and mid-term "natural" increase in the demand for CE in Maine. In Section IV we attempt to estimate the size of that increase.

Employment Status and CE Demand

Whether or not Maine citizens are in the labor force--and, if they aren't whether it is because they are working as housewives (rather than retired)--appears to affect their demand for continuing education.

Those in the labor force (i.e., those employed full- or part-time and those looking for work) are slightly more likely than housewives--and very much more likely than the retired--to want to participate in CE sometime soon.[13] In addition, those working full-time are significantly more likely than housewives or the retired to be currently participating in CE.[14] And, among those desiring CE, full-time workers have significantly higher levels of CE demand satisfaction than those of housewives, the retired, and the unemployed.[15]

Thus, while we might initially assume that those working full-time would be less likely to be participating in CE--the opportunity costs of time invested in CE might be higher for them than for others (particularly the retired), we find that the employed are more likely to be participating and that their CE demand is relatively well satisfied. A number of explanations might seem plausible. First, while some of the costs of CE might be higher for the employed than for others, the returns from CE participation might also be much greater--in job advancement and/or security. Second, the opportunity costs of CE may in fact be lower for many of the employed than they are for others. Employers may be paying all or some of their employees' CE time, travel, and monetary costs. And the locale of the CE activity of the employed--at or near the job site; on the way to or from work--may effectively lower the marginal time, travel, and dollar costs of their participation.

Why such a small proportion of Maine housewives who would like to participate in CE are actually doing so--9%, barely one-half the rate for the population as a whole, requires more than the pat answer that many would give it. For example, we should want to know whether the relatively low level of CE demand satisfaction among women as a group extends equally to housewives and to women who are in the labor force. We should also like to determine whether the status of "retiree" remains associated with lower potential and current CE demand after we have taken

into account the typically advanced age of retirees and the negative relationship between age and CE demand. Answers to these questions await more complex, multi-variate analysis of the Survey data.

Income and the Demand for CE

The CE Survey data on the relationship between respondents' family incomes and their own demand for continuing education is surprising (see Table III and Figure III-D). To be sure, there is a statistically significant relationship between income and the desire for CE. But the percentage of respondents who'd like to participate in the near future reaches 54% in the $7,000 to $9,999 income group and remains essentially constant at that figure on the middle and higher rungs of the income ladder. Thus, the relationship between income and potential demand is not as strong as that between age, education, or employment status and desire for CE.[16] And, as we shall see, the income-CE desire relationship disappears when other, essentially non-economic, aspects of respondents' backgrounds are taken into account (see Section IX).

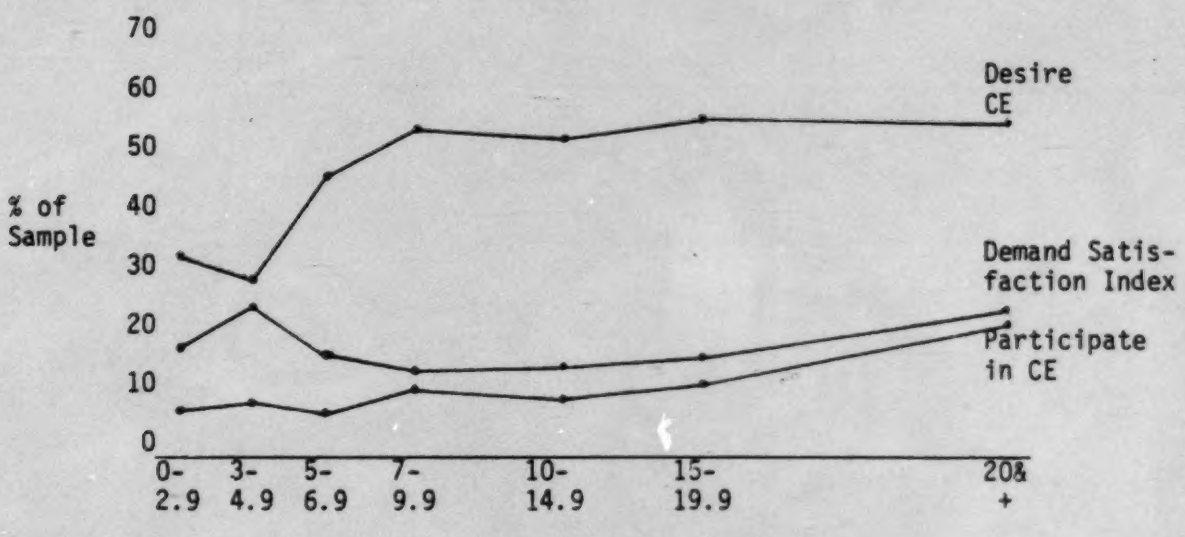

FIGURE III-D: FAMILY INCOME AND THE DEMAND FOR CONTINUING EDUCATION

What is more surprising is that the relationship between income and current CE participation is even weaker than that between income and potential participation.[17] Only those respondents with family incomes in excess of $20,000 have a current demand rate (19%) significantly higher than that for the sample as a whole (10%).

But what is most surprising is that the proportion of those desiring CE who are currently participating in it--the Demand Satisfaction Index--is no higher for those with incomes in excess of $20,000 than for those with only $3,000-4,999 per year (see Table III and Figure III-D). Indeed, there is no statistically significant relationship between income and satisfaction of CE demand.

Group Differences in--and the Group Structure of--CE Demand

Let us briefly summarize some of the Table III findings for which there is evidence of statistical significance.

Potential demand for ("% Desiring") CE is higher in Aroostook County and in towns of 5,000-9,999 people than it is elsewhere in Maine. It is unusually high among: women, 18-34 year olds, people with three or more years of college, those working or looking for work, and those in families with a yearly income of $7,000 or more. Age, education, and employment status are more closely related to potential demand than are the other group variables examined.

Shifting from the potential demand rates of groups to the group structure of potential demand, we find 50% of those desiring CE are 18-34 years old, 56% have no more than a high school education, 69% are working or looking for work, and 65% are in families with incomes of less than $15,000.

Current demand rates ("% Participating in CE") are, of course, much lower than potential demand rates, and the group-rate relationships are not always

identical across the two rates. Relationships with community size and education are virtually identical: The current demand rate is disproportionately high in towns of 5,000-9,999 and among people with at least three years of college. The group-current demand relationship is similar to the gorup-potential demand relationship with respect to age and employment status: those 25-34 (but not those 18-24) and those working (but not those looking for work) have substantially above-average current participation rates. However, unlike the patterns for potential participation, Aroostook County residents are below the state-wide norm on current participation, women are no more likely to be participating than men, and one must go to those with incomes of $20,000 or more before finding unusually high current participation rates.

The gross outlines of the group structure of current demand is similar to that of potential demand: 52% of current CE participants are 18-35 years of age, 71% are working (full- or part-time), and 60% have family incomes under $15,000. But the structure of potential and of current demand differ substantially in at least one respect: 56% of the potential demand but only 37% of the current demand is represented by people with no more than a high school education. Put another way, those with three or more years of college (18% of the sample) constitute 27% of those who want CE but are 49% of those who are getting CE. Thus, while across the state only 16% of those desiring CE are actually participating in it, the figure for people with three or four years of college education is 30%, and that for persons with post-graduate work is 43%--more than two and one-half times the state-wide rate. No other groups examined enjoy a level of demand satisfaction of that magnitude. On the other hand, DSI scores approximating one-half (or less) of the state-wide score were registered among respondents: in Aroostook County, in cities of 25,000 or more, with less than a high school education, or who described themselves as housewives.

Ethnicity, more specifically whether or not the respondent identifies as a Franco-American, appears to have no statistical relationship with any of the three CE demand variables. And, surprisingly, family income is only weakly related to current CE participation, and respondents with higher incomes do not seem to enjoy a significant advantage with respect to demand satisfaction. On the other hand, age, education, and employment status--particularly the first two--are related statistically to the CE demand variables--in some instances strongly related. The next section explores some of the impacts of age and education on the future demand for continuing education.

NOTES ACCOMPANYING SECTION III

[1]The four percentage-point difference between the Cumberland-York Region and the state as a whole is not, by our standards, statistically significant (see Table I-B). The overall relationship (chi-square test) between Region and potential demand for CE is only marginally significant (.07 level) and very weak (Cramer's V = .07). There is no relationship between Region and current participation in CE.

[2]The classical private sector marketing strategy has its public sector parallels. For example, American politicians are fond of observing that "In order to bag ducks, one goes where the ducks are." That is, to win votes, a candidate should campaign among those who are already predisposed towards his party.

[3]Note that we define relative CE demand satisfaction (the DSI) in terms of the proportion of group members desiring CE who are currently participating in it--rather than as the proportion of all group members who are currently participating. However, we recognize that there are other definitions of group demand satisfaction that might be at least as satisfactory as the one employed in this report. One such alternative would be the quantity and quality of CE opportunities objectively available to a group (relative to those available to other groups)--regardless of the level of potential or current CE demand in that group. However, the CE Survey was not designed to provide such data. Indeed, the collection of such data would require a research undertaking of substantial proportions.

[4]The male-female difference in DSI scores is significant only at the .07 level, and the sex-DSI score relationship is not very strong: The Phi and Pearsonian (r) correlation coefficients are only +.07. This latter figure suggests that less than one-half of one percent of the variation in DSI scores can be explained by variation in the sex variable (i.e., r^2 = .0049).

[5]See Section IX for an analysis of the relationship between Franco-American ethnicity and desire for CE when respondents' other social, economic, and demographic characteristics are statistically controlled.

[6]64% of all respondents identifying as Italian-Americans (n = 35) indicated a desire for CE. The chi-square for the cross-tabulation of Question 3 ("yes" or "no"--see Question 3) and ethnicity (Question 45, with the response categories English-, Franco-, and Irish-American, Italian-American, American Indian, "none" and "just American," and "all other" as categories), is significant at the .05 level.

[7]Cramer's V = .48, Tau_c = -.53, r = -.47, the last suggesting that variation in age "explains" nearly one-fourth (22%) of the variation in CE demand (r^2 = .22). (Note: Tau_c is a measure of statistical association which, like r, varies between -1.0 and +1.0; however, Tau_c makes less restrictive assumptions about the nature of the data than does r.)

[8]V = .17, Tau_c = -.10, r = -.15.

[9]The reason for this phenomenon is not hard to identify. Many of the 25-34 year-old CE participators' counterparts in the 18-24 year-old cohort are still full-time students and, as such, are excluded from this analysis. As these young counterparts move through their twenties, most will leave the ranks of full-time students--and many will become part-time students, i.e., 25-34 year old CE participators.

[10]What is more, current CE participants 65 and over differ from those under 65 (and, indeed, from those 55-64) in another less than heartening way. While three of every four of all current participants (and two of every three of those 55-64) desire to continue such participation, the fraction is but one in four among those 65 and older. (However, the latter estimate is based on a sample of only 15 respondents.)

[11]The education-potential demand rate relationship is significant (x^2 test) at the .0001 level; and V = .30, Tau_c = .33, and r = .29.

[12]For education and current demand, x^2 is significant at the .0001 level; V = .28, Tau_c = .16, r = .26. For the relationship between education and DSI scores, x^2 is significant at the .0001 level; V = .31, Tau_c = .23, r = .28.

[13]The x^2 for the employment status-CE desire relationship is significant at the .0001 level; V = .37. However, the major difference is between the retired and all other employment statuses as a group. The differences between those employed full-time and those looking for work, and between those working full-time ("outside the home") and those working in the home (housewives) are only marginally significant in the statistical sense.

[14]The relationship between employment status and current participation in CE is significant (the $\underline{x}^2$ is significant at the .0001 level), but the relationship is not particularly strong ($\underline{V}$ = .14). Note that we would not classify a relationship as 'strong' unless it was also statistically significant. However, a relationship that is statistically significant may be 'weak' and for that or other reasons analytically insignificant

[15]The relationship between employment status and CE Demand Satisfaction scores is significant at the .01 level, but the relationship is not very strong ($\underline{V}$ = .13).

[16]For income and potential demand, x^2 is significant at the .0001 level; $\underline{V}$ = .21, Tau_c = .20, $\underline{r}$ = .19.

[17]The x^2 for the relationship between income and current demand is significant at the .01 level; $\underline{V}$ = .12, Tau_c = .06, $\underline{r}$ = .09.

IV. AGE, EDUCATION, AND THE CHANGING DEMAND FOR CONTINUING EDUCATION

We have shown, in Section III, that age and education are both quite strongly related, at least in the statistical sense, to current and potential demand for continuing education. The higher the Survey respondent's age, or the lower the respondent's level of formal educational attainment, the less likely he or she is to desire CE and/or to be participating in CE.

We also know that today, as for decades, there is a significant negative statistical relationship between age and education--in Maine as elsewhere in the United States. Starting with those of roughly 25 years of age--the age at which the overwhelming majority of Americans have completed their full-time, formal education--the older the individual the fewer the years of formal education he or she is likely to have acquired. For example, the most recent Census count indicated that fewer than one in four (24%) of those living in Maine and 20-29 years of age in 1969 had not acquired a 12th grade education, while the comparable figure for those 60 or older was 60%. The age-education relationship is also quite strongly negative in our 1977 CE Survey data.[1]

This negative age-education relationship is, strictly speaking, a statistical rather than a causal relationship.[2] Nonetheless, its existence "predicts" an important phenomenon: As the relatively highly-educated younger age cohorts pass through their mid-twenties, and as death reduces the size of the relatively less-educated older age cohorts, the <u>average</u> level of formal education among Maine's adult population will rise--at a significant rate for a number of years.[3]

These phenomena suggest that, other things remaining the same, the demand for CE in Maine will be rising for a number of years, for "natural" reasons having to do with the increasing educational level of the adult population and

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[1]Footnotes will be found at the end of the Section.

the positive correlation between educational level and CE demand. The value of reasonably accurate projections of this increasing CE demand could be substantial. At minimum, such projections would serve CE providers--existing and potential, public and private--with a useful planning tool. Thus, we are tempted to utilize CE Survey-derived estimates of the age- and education-CE demand relationships, along with estimates of the absolute size and the age and educational structure of Maine's population in the years ahead, to forecast future demand for CE.

The Pitfalls of Projections

But the pitfalls of projections are many. In the most general sense, the problem is that the projections may be terribly inaccurate. More specifically:

1. The estimates of future CE demand levels would themselves be based on estimates: of the strength of the relationships between age, education, and CE demand; of the future size of Maine's adult--student and non-student--population; and of the future composition of that population with respect to age and formal educational levels.

2. The estimates would themselves be based on guesses--or, to be more charitable, on 'first approximations'--most importantly, of the actual causal impact of age and education on the demand for CE. To show that age and education are both statistically related to CE demand variables is not to prove that age and education are, in fact, 'causes' of such demand. Even in the absence of causal relationships, we could obtain statistical relationships between age and education on the one hand, and CE demand on the other, under at least two circumstances:

a. If CE Survey respondents' age, educational levels, and demand for CE were all at least partially determined by some fourth variable. (If such is the case, then the statistical relationships between age and CE demand,

and between education and CE demand, are 'spurious' rather than causal.)

b. if age or education, but not both, is a cause of CE demand. (If age and education are themselves in some sense causally related, then both might be related statistically to demand even though one relationship was causal and the other only spurious.)

3. A proper prediction model of CE demand would include all variables that are, in fact, significant causes of such demand--as well as the 'weight' that should be attached to each of those variables. But even if age and education are causally related to CE demand, they may not be the only causes of that demand. Indeed, we earlier identified another variable that may have a causal impact on the future demand for CE: past and present actual comsumption of education--traditional and continuing. That is, the hypothesis that "the more (education) you've had, the more you want" may be valid. And in Section III, we identified several variables in addition to age and education that bear at least a statistical relationship with CE demand, both actual and potential. Thus, a CE demand prediction model whose only operating variables are age and education may be incomplete ('misspecified').

It is possible, of course, for predictions based on suprious relationships and/or misspecified models to be confirmed--to be accurate--at least for a time. But at some point such predictions are very likely to fail. (For example, we have recently witnessed the dramatically declining accuracy of forecasts of consumer price level increases, forecasts based on current unemployment levels and the historcially negative statistical relationship between unemployment and price levels.)

Although, in this study, we deal, to a degree, with prediction problems 2a, 2b, and 3, we cannot completely overcome any of them. However, we can develop a relatively straight-forward (and, we believe, conservative)

estimate of the future demand for CE, a projection based only on (a) the statistical relationships between age, education, and demand (as measured in the CE Survey), and (b) estimates of near-term changes in the size and the age and educational structure of the adult population of the state. Those who might be tempted to make decisions on the basis of these projections should keep in mind the caveats listed above.

Age, Education, and CE Demand

Table IV provides a portion of the data we need to project the CE demand rates into the future. That table would seem to suggest that neither the age-demand nor the education-demand relationship is spurious. Age is negatively related to demand when education is 'held constant', and education is positively related to demand when age is 'held constant'. That is, within every educational grouping in Table IV, the proportion desiring CE declines significantly and virtually without interruption with increasing age; and within every age grouping excpet one (68-77), the proportion desiring CE increases significantly and virtually uninterrupted with increasing education. Similar phenomena are found among the data on current demand for CE, although there is no significant decline in current participation with increasing age among those with eight grades or less, or with nine to eleven grades, of formal education.

So, although age and education are themselves statistically related, each of them has effects on potential and current CE demand that are statistically independent of the effects of the other, and the two factors together 'explain' more of the variation in demand rates than either one does by itself.[4] For example, the percentages desiring CE range from 21% to 70% as we move from the lowest to the highest educational grouping, and from an even more impressive 6% to 74% as we shift from the oldest to the youngest age groupings (see Table IV). But, when we take both classifications into account, the percentage of

TABLE IV

% DESIRING AND % CURRENTLY PARTICIPATING IN CONTINUING EDUCATION WITHIN MAINE-WIDE GROUPS DEFINED BY AGE AND LEVEL OF TRADITIONAL EDUCATION

The top-left figure in each cell is the estimate of the % desiring CE--the potential demand for CE; the bottom-right figure is the estimate of the % currently participating in CE--the actual current demand. Total n = 1,701. Minimum cell n = 18; where indicated, cells have been combined to meet that minimum.

Education Level	Age 18-27	28-37	38-47	48-57	58-67	68-77	78 &+	Education Group Means
8th Grade or less		45 0	39 4	28 0	9 0	10 0	0 0	21 1
9th-11th Grade	52 14	52 2	52 4	24 5	18 6	3 3	3 0	30 5
12th Grade	73 13	62 6	51 6	38 10	27 4	10 0	4 0	48 7
1-2 Yrs. Post-high	85 22	74 7	49 12	46 13	21 1	7 7		54 10
3-4 Yrs. College	87 27	78 37	75 13	69 8	40 27	15 12	18 5	66 23
Grad/Prof. School		86 48		75 21				70 34
Age Group Means	74 17	68 14	54 10	40 8	24 7	9 3	6 1	

respondents desiring CE varies from literally 0% (among Survey respondents 78 years of age or older whose formal education did not extend beyond the 8th grade) to 86% (among those 47 and under with graduate or professional schooling beyond the four-year college degree). Likewise, although the current CE participation rates vary from 1% to 34% with increasing education, and from 1% to 17% with decreasing age, the participation rate varies from 0% among the most elderly who are least educated to 48% among those aged 47 or less with the most formal education.

These data would suggest that we will develop more accurate projections of future demand if we take both education and age into account.

Projecting CE Demand

We project the absolute demand for CE in the year 1987--ten years after the CE Survey--with a three-step calculation:

(1) by estimating the number of Maine adults (other than full-time students) who will be in each age-by-education grouping (defined in Table IV) in 1987;

(2) by multiplying each of those population estimates by the potential and current CE demand rates entered in Table IV; and then

(3) by summing the products from each grouping across all the groupings in that table, in order to obtain estimates of (a) the number of people who will desire CE and (b) the number who will actually be participating in CE in 1987.

Our estimates of 1987 demand will be accurate <u>if</u> our estimates of the numbers of people who will be in each age-education category in 1987 are accurate, <u>and if</u> the CE demand rates in each age-education category will be the same in 1987 as they were in 1977 (i.e., the same as those in Table IV).

The following procedures are utilized in estimating the 1987 population in each age-education grouping:

(a) The estimate of the population that will be at each age and educational level in 1987 begins with an estimate of the number of people in the same educational level but ten years younger in 1977. The 1977 estimate, in turn comes from the CE Survey data--when those data are 'collapsed' into the 35 different age-education groups defined in Table IV. For example, our estimate of the population 28-37 with a 12th grade education in 1977 becomes our estimate of the population 38-47 with a 12th grade education in 1987.

(b) The 1987 estimates are incremented by the Survey-based estimate of the number of full-time students in 1977, adding them in the age category ten years older--and the education level one step above--that in which they were located in 1977.

(c) We remove from the estimated 1987 population in each age-education grouping the same proportion of people who were full-time students in that grouping in 1977.

(d) We assume that the 18-27 year-old group in the 1987 population will be of the same absolute size and educational levels as the 18-27 cohort in 1977.

(e) We assume (1) a death rate of 11.5 per thousand total population per year during 1977-1987,[5] (2) that all mortality is concentrated among those who were 48 or older in 1977, and (3) that during the ten year period, death would take 15% of those 48-57, 35% of those 58-67, 55% of those 68-77, and 85% of those 78 and older in 1977. (This assumed 1977-1987 mortality-based reduction in the population 48 and older in 1977 is exactly offset by the addition of those 18-27 years old in 1987.)

(f) We assume an adult population growth rate of 1.05% per year for ten years,[6] and that the rate is constant across all age-educational groupings.

Given the 1987 age-education group population estimates derived by the foregoing procedures, and the application of steps (2) and (3), above, we estimate that changes in the size and the age and educational structure of the Maine adult population will lead to the following 1977-1987 changes in the demand for continuing education (all other things remaining the same):

	304,300		Estimated number desiring CE in 1977
	+ 24,300	(+8.0%)	Estimated increase due to change in age and educational levels
Potential Demand	+ 33,500	(+11.0%)	Estimated change due to population increase
	362,100	(+19.0%)	Estimated number desiring CE in 1987

	65,000		Estimated participation in CE in 1977
	+ 6,200	(+9.5%)	Estimated increase due to change in age and educational levels
Current Actual Demand	+ 7,200	(+11.0%)	Estimated change due to population increase
	78,400	(+20.5%)	Estimated number participating in CE in 1987

These projected increases in CE demand are significant but far from overwhelming. The 19% increase over the ten year period in potential demand caused by demographic factors amounts to an annual rate of increase of approximately 1.8% compounded annually. The 20.5% demography-based estimated increase in actual CE participation is equivalent to about a 1.9% annual increase compounded yearly.

But these are conservative estimates of the likely increase in demand for CE. First, the assumptions we made when estimating the 1987 populations of each of the age-education groupings generally bias our demand estimates downward. We have assumed an end to the historic rise, from one birthyear cohort to the next, in the average level of formal education acquired before the 28th birthday. We have assumed that, 1977's full-time students aside, no one 18 or older in 1977 will obtain any formal education during the 1977-1987 period. We have assumed that the likely increase in the population of the state will be spread across all age-educational groups proportionally to the size of those groups in 1977. To the extent that the average educational levels of young adults continue to rise; to the extent that the young (and not so young) adults return to formal education on a part-time basis; and/or to the extent that the 'net' of in-migration and out-migration biases the 1987 population in the direction of the young and the more highly educated; to that extent our estimates of the demography-based increases in CE demand ten

years hence will prove to be low, perhaps far too low.

More important, our estimates of CE demand change will be too low if the 1987 CE demand rates are higher, on balance, than the 1977 rates entered in Table IV. In using the 1977 rates to project 1987 demand, we have assumed that the demand in each age-educational group will be the same in 1987 as it was in 1977. At the same time, however, we assume the probability that a given individual will desire and/or participate in CE will be significantly lower in 1987 than it was in 1977. That is, we assume that demand declines with age within educational groupings (see Table IV).

Thus, our projections do not take into account (1) the possible validity of the 'Cracker-Jack' (the more education a person has had, the more he or she wants) and 'life long learning' (learning continues throughout one's life) hypotheses; (2) the possible 'period effects' of age on the demand for CE that are independent of period effects on formal education;[7] (3) that the costs of CE may be falling--relative to the costs of alternative forms of education and of alternative uses of discretionary time; (4) that the amount of discretionary time available to adults may be increasing; and (5) that the providers of CE may substantially affect the demand for CE not only by reducing its relative cost but by enhancing its utility to citizens.

In summary, our projections of CE demand are limited in their scope, do not take into account a number of variables that may affect (generally in a positive direction) future demand for CE, and, hence, are likely to be quite conservative. Nonetheless, the projections may be useful as indications of the minimum demand for continuing education in 1987.

NOTES ACCOMPANYING SECTION IV

[1]Those 20-29 and those 60 and older during the 1969 Census count were 28-37, and 68 and older, respectively, in 1977. The 1977 Maine CE Survey (non-student sample) shows the proportions without 12 grades or more of formal education as 16% for those 28-37 and 52% for those 68 and older. The difference between the Census and Survey estimates is probably due in some substantial part to causes other than the education bias in the CE Survey's sample (see Section I). For example, those 28-37 in 1977 include a sizeable contingent that was not present during the 1969 count in the state: recent migrants to Maine, few of whom have less than a 12th grade education. The Pearsonian correlation (r) between CE Survey respondents' age and education is -.23.

[2]That is, the process of aging does not cause a reduction in one's formal educational attainment. Nor does increasing one's formal education cause one to lose chronological age. When we speak of a negative relationship, among adults, between age and educational attainment, what we mean is that during a period in which (for a complex of social, economic, and political reasons) almost every succeeding birthyear cohort has received more formal education than did the cohort which preceded it, how much formal education an adult has is in part a function of the recency of the period in which he or she acquired that education. Thus, 35 year old Mainers typically have more formal education than do Mainers 65 years of age not because the former are 30 years younger than the latter, but because the former group's youth and young adulthood, the traditional period for the acquisition of formal education, took place during a period in which Americans were "staying in school longer" than ever before. Thus, while a negative statistical relationship exists between age and formal educational attainment, it is likely that the primary causal relationship involved is what might be termed the 'period effects' of age, as distinguished from any 'aging process effects' of age, on formal educational attainment. Indeed, for any given individual, formal educational attainment cannot, by definition, decline with increasing age. (There are factors other than the period effects of age that may contribute to a statistical relationship between age and education in Maine at any one point in time, for example, the ratio of in-migrants to out-migrants among citizens at above- and below-average levels of formal education and of various ages.)

However, while the period effects of age on education may have existed for some time--and may continue to do so for decades, those effects are not necessarily immutable. For example, today's negative relationship between age and education will persist for four or five decades after the point at which the within-cohort increase in the amount of formal education acquired after what have been the traditional years for such training exceeds the between-cohort increase in the amount of formal education received during the traditional years of such training. Thus, if the average level of education of those reaching the age of 25 should remain constant at, let us say, 14 years, and the average amount of formal education acquired after age 25 should continue to be any non-zero amount, then the relationship between age and education would gradually change from negative to positive--with the magnitude of the positive relationship depending on the amount and timing of formal education acquired after age 25.

[3]Subject, of course, to the amount and character of migration to--and from--the state (see previous note).

[4]The coefficient of multiple determination R^2 linking desire (potential demand) for CE with age and education is .26. Of this, .17 is attributable to differences in age, .04 is attributable to differences in education, and .05 is a shared component of the two. The partial (standardized) Beta coefficients are -.43 for age and +.19 for education in the case of desire for CE. The R^2 linking current participation in (demand for) CE with age and education is .08. Of this, .01 is attributable to age differences, .05 is attributable to educational differences, and .02 is a shared component of both. The Beta coefficients are -.10 for age and +.24 for education when the two are used to 'explain' current demand.

[5]The death rate in Maine was 11.0 per thousand population in 1969; see U.S. Bureau of the Census, County and City Data Book, 1972, p. 223.

[6]Based on the 1977-1982 growth-rate estimate of 1.05% per year which appears in Maine State Planning Office, Statistical Reports (July 1977), p.2.

[7]The 'period effects' of age should be distinguished from the 'aging effects' of age. The former are best thought of (in the context of this study) as the effects of the particular historical period in which an individual obtained his or her basic values regarding ('taste for') education, i.e., in the typical case, the years when the individual went through youth and young adulthood. The period effects of age presumably remain fairly constant through the life of a given individual. The aging effects of age are the physical and psychological effects of the process of aging. Presumably, as an individual gets older, particularly in the middle years and beyond, the aging effects of age serve to depress demand for, and, particularly, participation in, continuing education. One reservation we have about using estimates of 1977 demand rates as estimates of 1987 demand rates is that we cannot determine the extent to which the decline of CE demand that comes as we move from younger to older people in Table IV reflects period effects of age that are independent of formal education, and the extent to which the decline comes from the aging effects of age. If all effects of age are period effects, then there will be no decline of demand with increasing age of specific individuals (and the 'life-long learning' hypothesis will be supported). In such case, the CE demand rates in 1987 for those 18-27 and with a 12th grade education in 1977 would remain at 73% (desiring CE) and 13% (participating in CE) rather than falling to 62% and 6%. Clearly, then, to the extent that the apparent effects of age are period effects rather than aging effects, our estimates of 1987 CE demand will be too low. (See also note 2 of this Section.)

V. WHAT IS WANTED: THE SUBJECTS, CREDENTIALS, AND ANCILLARY SERVICES IN DEMAND

We now turn from considerations of the quantity of current and potential demand for continuing education and forecasts of future CE demand to matters regarding the quality of demand. Section V describes the subject matter content of current and desired CE participation, as well as the types of credentials and ancillary educational services that Maine adults would like to obtain through their future participation in CE. Section VI explores the locations at which, and the media through which, citizens wish to participate in CE. A brief Section VII deals with preferences for the scheduling of CE participation. Thus, Sections V through VII together help answer the questions, with regard to continuing education in Maine, "Who wants what, where, how, and when?"

Subject Areas of Current CE Participation

The subject matter of current CE participation in Maine is described in summary fashion in the two columns on the right-hand side of Table V-A. Among the 10%--the estimated 65,000--of the state's adult population who were taking part in a part-time learning activity in the summer of 1977, arts and crafts, business, and education were the topics most commonly pursued, each claiming the attention of about one-eighth--or an estimated 7,000-8,000 of CE participants state-wide.[1] The physical sciences, health-related subjects, social sciences-humanities, and religious subjects each drew about one-eighth to one-tenth--an estimated 5,000-6,000--of the participants state-wide. The three categories of vocationally oriented CE activities together

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[1]Footnotes will be found at the end of the Section

drew six to seven percent, with roughly 2,000 Mainers actively acquiring vocational craft skills, another roughly 2,000 involved in learning in automotive mechanics, and a few hundred pursuing other vocational subjects. Recreation topics, general education (including part-time high school equivalency work), and law and law enforcement studies each were being pursued by from 1,000-2,000 part-time learners. Miscellaneous other learning areas together accounted for about 9,000 current CE participators.[2]

Table V-B provides a two-way breakdown of the subject matter of current CE participation by demographic and socio-economic groupings. Under each subject matter column heading in that table are two columns of figures. The left-hand column tells us how the participants in each subject area were distributed among the groups. For example, of all those participating in business-related learning activities, 3% were residents of Aroostook County, 2% of Washington County, 20% of the Cumberland-York region, etc. The right-hand column of figures under each subject heading (the column in parentheses) tells us how the participating group members were distributed among the subject areas. For example, of the Aroostook County respondents participating in CE, 5% were pursuing business subjects, 21% were involved in arts and crafts activities, 16% were in general education, 10% were learning about recreational activities, etc. (Note that a complete picture of the CE activities of a given group may be had only by examining all three pages of Table V-B.)

The small size of the sample of current CE participators makes the Table V-B estimates subject to greater possible error than we would like. However, the data are sufficient to suggest some statistically significant relationships between current participators' group attributes and the subject matter of their CE activities. Activists' differences with respect to their sex, employment status, education, income, and age would appear to be related to differences in the CE subject topics they pursue.[3] Business topics are pursued

TABLE V-A

SUBJECT AREAS MENTIONED BY THOSE DESIRING CONTINUING EDUCATION AND SUBJECT AREAS OF LEARNING OF THOSE CURRENTLY PARTICIPATING IN CONTINUING EDUCATION

	Those Desiring Continuing Education				Current Participators	
Subject Area	% of Subjects Most Desired (Q4)	Estimated Number of People (in Thousands)	% of All Subjects Mentioned (Q4+Q5)*	Estimated # of Enrollments (in Thousands)	% of Subjects Studied (Q2A)	Estimated Number of People (in Thousands)
Business	18.5%	54.9	16.8%	86.2	12.7%	8.0
Arts & crafts	17.8%	52.5	19.4%	99.2	12.9%	8.1
(arts & crafts)	(11.8)	(34.9)	(12.2)	(62.7)		
(fine arts)	(6.0)	(17.6)	(7.1)	(36.4)		
Social sciences & humanities	15.0%	44.3	15.5%	79.6	8.0%	5.0
Science, math, engineering, electronics	8.7%	25.9	8.1%	41.5	9.9%	6.2
(sciences, math & engineering)	(7.0)	(20.8)	(6.6)	(33.7)		
(electronics)	(1.7)	(5.1)	(1.5)	(7.8)		
Vocational crafts & machine operation	8.6%	25.6	9.1%	46.6	3.3%	2.1
(construction trades)	(6.7)	(20.0)	(7.7)	(39.2)		
(heating, air-cond., refrigeration)	(0.5)	(1.6)	(0.3)	(1.6)		
(other crafts & machine operation)	(1.4)	(4.0)	(1.2)	(5.9)		
Health	8.0%	23.9	7.5%	38.4	9.2%	5.8
(health, nursing, first aid)	(7.5)	(22.3)	(7.0)	(36.1)		
(child & human development)	(0.5)	(1.6)	(0.5)	(2.4)		
Education	5.4%	16.0	5.1%	26.3	11.3%	7.1
Vocational: auto & engine mechanics	3.3%	9.8	4.0%	20.4	2.8%	1.8
Vocational: services & other	2.6%	7.8	2.2%	11.4	0.4%	0.3
(hairdressing & barbering)	(1.1)	(3.1)	(0.9)	(4.7)		
(working with children, elderly)	(0.9)	(2.7)	(0.8)	(3.9)		
(protective services)	(0.4)	(1.2)	(0.2)	(1.2)		
(other, inc. librarian, int. design)	(0.3)	(0.8)	(0.3)	(1.6)		

TABLE V-A
(continued)

Subject Area	Those Desiring Continuing Education: % of Subjects Most Desired (Q4)	Those Desiring Continuing Education: Estimated Number of People (in Thousands)	Those Desiring Continuing Education: % of All Subjects Mentioned (Q4+Q5)*	Those Desiring Continuing Education: Estimated # of Enrollments (in Thousands)	Current Participators: % of Subjects Studied (Q2A)	Current Participators: Estimated Number of People (in Thousands)
(continued)						
General education	1.8%	5.1	1.7%	8.6	2.3%	1.4
(high school, GED)	(1.6)	(4.7)	(1.1)	(5.9)		
(a more general education)	(0.1)	(0.4)	(0.5)	(2.7)		
Recreation	1.6%	5.1	2.4%	12.2	3.0%	1.9
(navigation)	(0.4)	(1.2)	(0.2)	(1.2)		
(fishing & trapping)	(0.1)	(0.4)	(0.2)	(1.2)		
(flying lessons)	(0.1)	(0.4)	(0.4)	(2.0)		
(other sports & hobbies)	(1.1)	(3.1)	(1.5)	(7.8)		
Law, law enforcement	1.5%	4.3	1.4%	7.1	2.0%	1.3
Bible studies, religion	1.1%	3.1	0.8%	4.3	8.3%	5.2
Other	6.1%	18.1	6.0%	30.7	14.0%	8.8
(agriculture, horticulture, forestry)	(2.5)	(7.4)	(2.8)	(14.5)		
(auto driving--not truck)	(0.7)	(2.0)	(0.7)	(3.5)		
(architecture)	(0.7)	(2.0)	(0.5)	(2.4)		
(broadcasting)	(0.5)	(1.6)	(0.3)	(1.7)		
(home economics)	(0.4)	(1.2)	(0.7)	(3.5)		
(other)	(1.3)	(3.9)	(1.0)	(5.1)		
Totals	100.0%	296.4	100.0%	512.3	100.0%	62.7
(N)	(756)		(1,307)		(160)	

*A maximum of three subjects were coded for each respondent desiring CE: the one subject named in response to Question 4, and as many as two subjects named in response to Question 5.

TABLE V-8
TOPIC OF "CURRENT" CE ACTIVITY (Q2A), MAINE-WIDE AND WITHIN SELECTED GROUPS

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%. * = Less than 0.5%

	Business % ↓ (% →)	Arts & Crafts % ↓ (% →)	Social Sciences, Humanities % ↓ (% →)	Sciences, Math, etc. % ↓ (% →)	Vocational Crafts & Machine Operation % ↓ (% →)
All participating in CE	(13)	(13)	(8)	(10)	(3)
Region					
Aroostook County	3 (5)	11 (21)	0 (0)	4 (5)	0 (0)
Washington County	2 (8)	2 (8)	1 (4)	1 (4)	3 (4)
H'cock, Penob., Piscat.	23 (13)	15 (8)	25 (8)	25 (10)	30 (4)
Nine central counties	52 (16)	25 (8)	41 (8)	44 (10)	67 (5)
Cumberland & York	20 (10)	46 (24)	32 (10)	26 (10)	0 (0)
Size of town/city					
Less than 2,500	35 (14)	34 (14)	28 (7)	34 (11)	70 (7)
2,500-4,999	16 (10)	11 (7)	12 (5)	28 (14)	0 (0)
5,000-9,999	28 (14)	11 (6)	39 (12)	21 (8)	30 (4)
10,000-24,999	13 (12)	40 (35)	11 (6)	0 (0)	0 (0)
25,000 or more	8 (12)	4 (6)	11 (10)	16 (19)	0 (0)
Sex					
Men	54 (13)	16 (4)	77 (12)	91 (17)	100 (6)
Women	46 (12)	84 (23)	23 (4)	9 (2)	0 (0)
Ethnicity					
Franco-Americans	23 (21)	20 (18)	21 (12)	9 (6)	0 (0)
Age					
18-24	15 (16)	15 (16)	11 (7)	34 (28)	0 (0)
25-34	39 (13)	30 (10)	34 (7)	36 (9)	52 (5)
35-44	20 (16)	7 (5)	14 (7)	14 (8)	0 (0)
45-54	9 (9)	15 (15)	17 (11)	16 (13)	48 (13)
55-64	17 (20)	1 (1)	0 (0)	0 (0)	0 (0)
65-74	0 (0)	32 (45)	25 (21)	0 (0)	0 (0)
75 & older	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Education					
8th Grade or less	0 (0)	7 (54)	0 (0)	0 (0)	0 (0)
9th-11th Grade	0 (0)	23 (40)	11 (11)	0 (0)	3 (1)
12th Grade	19 (9)	38 (18)	11 (3)	67 (24)	33 (4)
1-2 yrs. Post-high	52 (41)	8 (6)	0 (0)	12 (8)	15 (3)
3-4 yrs. College	25 (10)	18 (7)	46 (11)	10 (3)	48 (5)
Grad/professional school	4 (3)	7 (6)	32 (18)	11 (8)	0 (0)
Employment status					
Full-time	69 (15)	29 (7)	63 (9)	85 (15)	61 (3)
Part-time	5 (6)	15 (19)	6 (5)	0 (0)	0 (0)
Looking for work	0 (0)	0 (0)	0 (0)	15 (35)	0 (0)
Retired/disabled	17 (18)	20 (21)	25 (16)	0 (0)	39 (9)
Housewife	9 (9)	36 (37)	6 (4)	0 (0)	0 (0)
Family income					
Under $3,000	0 (0)	9 (15)	0 (0)	10 (13)	15 (8)
$3,000-4,999	10 (13)	10 (13)	19 (13)	6 (6)	0 (0)
$5,000-6,999	0 (0)	10 (20)	19 (20)	0 (0)	0 (0)
$7,000-9,999	8 (7)	30 (26)	0 (0)	33 (24)	37 (10)
$10,000-14,999	33 (19)	16 (9)	32 (10)	1 (1)	48 (8)
$15,000-19,999	11 (9)	17 (13)	21 (9)	0 (0)	0 (0)
$20,000 & more	39 (19)	8 (4)	9 (2)	50 (20)	0 (0)
(N--approx.)	(20)	(21)	(13)	(16)	(5)

TABLE V-8
Continued, page 2

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%. * = Less than 0.5%

	Health % ↓ (% →)	Education % ↓ (% →)	Vocational Auto & Engine Mechanics % ↓ (% →)	Vocational Services & Other % ↓ (% →)	General Education % ↓ (% →)
All participating in CE	(9)	(11)	(3)	(3)	(2)
Region					
Aroostook County	8 (11)	3 (5)	13 (5)	100 (5)	47 (16)
Washington County	4 (13)	7 (29)	0 (0)	0 (0)	5 (4)
H'cock, Penob., Piscat.	22 (8)	26 (13)	18 (2)	0 (0)	0 (0)
Nine central counties	48 (10)	49 (13)	39 (3)	0 (0)	48 (3)
Cumberland & York	19 (7)	15 (7)	30 (3)	0 (0)	0 (0)
Size of town/city					
Less than 2,500	38 (11)	23 (8)	30 (3)	100 (1)	5 (1)
2,500-4,999	21 (10)	24 (14)	57 (8)	0 (0)	0 (0)
5,000-9,999	31 (11)	29 (13)	0 (0)	0 (0)	48 (4)
10,000-24,999	4 (2)	10 (8)	13 (2)	0 (0)	47 (7)
25,000 or more	5 (6)	14 (19)	0 (0)	0 (0)	0 (0)
Sex					
Men	31 (5)	44 (9)	100 (5)	100 (1)	53 (2)
Women	69 (13)	56 (13)	0 (0)	0 (0)	47 (2)
Ethnicity					
Franco-Americans	20 (13)	9 (6)	0 (0)	0 (0)	31 (5)
Age					
18-24	9 (7)	0 (0)	0 (0)	0 (0)	53 (10)
25-34	45 (11)	68 (20)	57 (4)	100 (1)	16 (1)
35-44	25 (14)	12 (8)	43 (7)	0 (0)	16 (2)
45-54	4 (3)	10 (9)	0 (0)	0 (0)	0 (0)
55-64	16 (14)	11 (11)	0 (0)	0 (0)	16 (3)
65-74	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
75 & older	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Education					
8th Grade or less	0 (0)	0 (0)	0 (0)	0 (0)	16 (23)
9th-11th Grade	0 (0)	1 (1)	0 (0)	0 (0)	64 (19)
12th Grade	16 (5)	3 (1)	30 (3)	100 (1)	16 (1)
1-2 yrs. Post-high	41 (24)	0 (0)	18 (3)	0 (0)	5 (1)
3-4 yrs. College	37 (11)	55 (19)	52 (5)	0 (0)	0 (0)
Grad/professional school	5 (3)	41 (32)	0 (0)	0 (0)	0 (0)
Employment status					
Full-time	75 (12)	79 (16)	30 (2)	100 (1)	21 (1)
Part-time	14 (13)	0 (0)	70 (19)	0 (0)	0 (0)
Looking for work	9 (21)	0 (0)	0 (0)	0 (0)	64 (35)
Retired/disabled	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Housewife	1 (1)	21 (19)	0 (0)	0 (0)	16 (3)
Family income					
Under $3,000	21 (30)	0 (0)	0 (0)	0 (0)	0 (0)
$3,000-4,999	0 (0)	0 (0)	39 (13)	0 (0)	64 (18)
$5,000-6,999	1 (2)	11 (20)	0 (0)	0 (0)	16 (6)
$7,000-9,999	11 (8)	1 (1)	0 (0)	0 (0)	16 (3)
$10,000-14,999	17 (8)	35 (19)	18 (3)	100 (2)	5 (1)
$15,000-19,999	14 (9)	27 (20)	43 (9)	0 (0)	0 (0)
$20,000 & more	35 (14)	27 (13)	0 (0)	0 (0)	0 (0)
(N--approx.)	(15)	(18)	(5)	(1)	(4)

TABLE V-B
Continued, page 3

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%. * = Less than 0.5%

	Recreation		Law, Law Enforcement		Bible Studies, Religion		Other		(N)
	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)	
All participating in CE		(3)		(2)		(8)		(14)	(160)
Region									
Aroostook County	24	(10)	0	(0)	9	(10)	3	(5)	(19)
Washington County	8	(8)	0	(0)	1	(4)	2	(12)	(22)
H'cock, Penob., Piscat.	68	(8)	0	(0)	30	(10)	25	(15)	(48)
Nine central counties	0	(0)	56	(3)	40	(8)	39	(13)	(39)
Cumberland & York	0	(0)	44	(3)	21	(7)	31	(17)	(29)
(UNWTD)									
Size of town/city									
Less than 2,500	67	(6)	56	(4)	18	(5)	18	(8)	(50)
2,500-4,999	21	(3)	0	(0)	24	(10)	27	(19)	(32)
5,000-9,999	0	(0)	0	(0)	29	(10)	36	(19)	(41)
10,000-24,999	12	(2)	0	(0)	24	(13)	12	(12)	(23)
25,000 or more	0	(0)	44	(10)	6	(6)	7	(12)	(13)
Sex									
Men	55	(3)	100	(4)	22	(3)	56	(15)	(85)
Women	45	(3)	0	(0)	78	(14)	44	(13)	(76)
Ethnicity									
Franco-Americans	41	(9)	0	(0)	4	(3)	7	(7)	(22)
Age									
18-24	0	(0)	0	(0)	24	(16)	1	(1)	(20)
25-34	49	(4)	100	(5)	10	(2)	23	(8)	(61)
35-44	0	(0)	0	(0)	19	(10)	26	(22)	(26)
45-54	34	(8)	0	(0)	12	(8)	11	(13)	(20)
55-64	17	(5)	0	(0)	30	(23)	18	(23)	(17)
65-74	0	(0)	0	(0)	0	(0)	22	(33)	(15)
75 & older	0	(0)	0	(0)	6	(100)	0	(0)	(1)
Education									
8th Grade or less	0	(0)	0	(0)	0	(0)	3	(23)	(3)
9th-11th Grade	17	(7)	0	(0)	19	(21)	0	(0)	(12)
12th Grade	17	(2)	44	(3)	46	(14)	26	(13)	(45)
1-2 yrs. Post-high	16	(3)	0	(0)	6	(3)	10	(8)	(26)
3-4 yrs. College	46	(4)	0	(0)	29	(8)	40	(17)	(52)
Grad/professional school	4	(1)	56	(8)	0	(0)	22	(21)	(23)
Employment status									
Full-time	62	(3)	100	(3)	25	(3)	53	(11)	(92)
Part-time	0	(0)	0	(0)	41	(29)	8	(10)	(16)
Looking for work	14	(9)	0	(0)	0	(0)	0	(0)	(7)
Retired/disabled	19	(4)	0	(0)	7	(4)	27	(27)	(19)
Housewife	4	(1)	0	(0)	27	(16)	11	(11)	(20)
Family income									
Under $3,000	0	(0)	0	(0)	22	(21)	7	(13)	(10)
$3,000-4,999	0	(0)	0	(0)	27	(19)	3	(4)	(13)
$5,000-6,999	17	(9)	56	(20)	0	(0)	1	(2)	(9)
$7,000-9,999	12	(3)	0	(0)	2	(1)	16	(16)	(19)
$10,000-14,999	21	(3)	44	(5)	6	(2)	16	(10)	(30)
$15,000-19,999	46	(9)	0	(0)	0	(0)	26	(22)	(23)
$20,000 & more	4	(*)	0	(0)	43	(12)	30	(16)	(36)
(N--approx.)	(5)		(3)		(13)		(22)		

disproportionately by those CE activists with one or two years of post-high school training, but not by those with more--or less--education. CE participants overrepresented in arts and crafts activities were women, housewives, respondents 65-74 years of age, and those with less than a high school education. CE work in the sciences and mathematics attracted a disproportionate share of the male, young, and middle education (high school graduate) CE participants. The vocational skill categories included far more male, 25-54 year old, and middle-to-upper-middle educational level (12th to 16th grade) CE participators than one would expect by chance. Health activities were distinctly the focus of those with at least some college education and/or of those working or looking for work. CE participators taking education courses were, not surprisingly, disproportionately 25-34, had at least a college degree, worked full-time (frequently as teachers, of course) or were housewives, and/or were of lower-middle to middle income ($5,000-$20,000). Religion and Bible studies were the CE topics of 14% of the women but only 3% of the men--and disproportionately of the poor--active in CE in the summer of 1977.

Subject Area Preferences of Potential CE Participators

A breakdown of potential CE demand, that is, the subjects, topics, or skills mentioned by those desiring "to take part in some form of further learning activity" within the next two years, is found in the two left-hand and the two center columns of Table V-A. The left-hand columns present (1) the frequency distribution of the subjects "most desired," i.e., the one subject each potential participant in CE said he or she would "most like to study or learn more about," and (2) the projection of that distribution to the adult population of Maine. The center two columns summarize (3) the distribution of all CE subjects or topics named by each potential participator--both that mentioned as most desired and up to two subjects mentioned as "other areas" each "would like to study or learn more about," and (4) the projection of that distribution in

the form of an estimate of the total number of subjects--"enrollments"--that would have been recorded had the CE Survey interviewed the entire adult (non-student) population of Maine and had elicited as many as three preferred topics of study from each person who indicated a desire to participate in CE in the next two years.

A comparison of the totals for the second and fourth columns in Table V-A suggests that while the total number of potential participators (the total number of "most desired" CE subjects) approximates 300,000 state-wide, the total number of subject areas ("enrollments") they would like to study exceeds an estimated one-half million![4] Approximately 60% of the Survey's potential participators mentioned two subjects they would like to learn more about, and another 12% mentioned three or more subjects. But, since the CE Survey did not inquire about the total number of subjects each current CE participator was studying, and asked for a description of only one current activity (see Questions 2 and 2a), we do not have the proper current CE subject area total "enrollment" figures and descriptions to compare with the estimated 500,000-plus units--and the subject-matter breakdown of those units--in the near-term potential demand. Thus, in describing the subject distribution of the potential demand, and in comparing current with near-term potential demand by subject area, we must use the distribution and projections of "subjects most desired" by potential participants (the results of Question 4), rather than "all subjects mentioned" (Questions 4 and 5) by such participants.

More than one-half of the CE subjects most desired by potential CE participators can be located in three general subject matter categories: business, arts and crafts, and social science and humanities. Business and the arts-crafts nexus each contain over one-sixth--or an estimated 50,000-plus each--of the priority subjects demanded state-wide.[5] The social sciences-

humanities combination accounts for another nearly one-sixth and 45,000 adults. The science-math-engineering grouping at nearly 9%, or 25,000, and the health-related subjects, at 8%--nearly 25,000, together make up a similar-sized grouping. The three major categories of more traditional "vocationally"-oriented subject categories together comprise another roughly one-sixth--and nearly 45,000--of the subjects most desired, with training in the construction and related trades (over 20,000) nearly one-half of that. Over 5% (16,000) of the most demanded CE courses are in the education area (learning how to teach). General education (for the most part adults wanting to work part-time toward a high school diploma or its equivalent) accounts for between one and two percent (about 5,000) of the courses most desired, as do activities in each of two other areas--recreation and law-law enforcement. Bible and other religious studies together are about 1%--roughly 3,000--of the potential participators' most desired topics of study. Finally, 6%--an estimated 18,000--of the CE topics are in the residual category, nearly one-half of them in the agriculture-forestry sub-group.

Potential Increase in Demand, by Subject Area

By comparing the estimated number of people included in the state-wide potential near-term demand with the estimated number in the current demand, on a subject area by subject area basis, we can order the subject areas in terms of their potential increases in demand, relative and absolute:[6]

	Potential Increased Demand	
	Relative	Absolute
Vocational: services and other.....	+2,500%	+7,500
Vocational crafts & machine operation...	+1,119%	+23,500
Social sciences & humanities.....	+786%	+39,300
Business.....	+586%	+46,900
Arts & crafts.....	+548%	+44,400
Vocational: auto & engine mechanics.....	+444%	+8,000
Science, math, engineering, etc.....	+318%	+19,700
Health.....	+312%	+18,100
General education.....	+264%	+3,700
Law & law enforcement.....	+231%	+3,000
Recreation.....	+168%	+3,200
Education.....	+125%	+8,900
Other.....	+106%	+9,300
Bible studies, religion.....	-40%	-2,100

Notice that all three of the "traditional" vocational categories, plus business, social sciences-humanities, and arts and crafts have potential near-term growth rates varying from many times to merely significantly higher than the estimated potential near-term overall growth rate, 368%, and that all but one of the subject categories would appear to have substantial room for near-term growth in an absolute sense.

Bible and other religious studies is the only general subject category in which the near-term potential demand may well be smaller than the current actual demand. Although our samples of current and potential participants in this subject category are miniscule, analysis of them produces interesting if only tentative findings. About one-third (31%) of the respondents currently participating in religious studies indicated, in response to Question 3 of the CE Survey, that they wanted further learning activity" in the next two years and, in answering Question 3a, mentioned religion as their most desired topic of that activity. That 31% subject-area "continuity rate" is not significantly different from the (weighted) average across all categories (25%).[7] This only average sized religious study continuity group nonetheless represents nearly one-half--45%--of all those desiring CE who "most desired" religious studies. The remaining 55% of the potential demand were not currently participating in any CE activity. This 55% "newcomer" component in the potential demand for religious study in turn is proportionally smaller than the newcomer element in the potential demand for any other CE subject area. Thus, the potential near-term demand for religious study may be lower than the actual demand in the summer of 1977 because relatively few, among those desiring CE but not then currently participating in it, wanted to take on CE work on religion, at the same time that only an average proportion of those then currently participating in this subject area apparently wished to continue in it.[8]

Given that potential near-term CE participators outnumber current participators in the Survey data by a ratio greater than 4.5:1, it isn't surprising that, generally speaking, the subject areas with the highest potential near-term growth rates appear generally to be those with the highest ratios of CE newcomers (those not participating in any CE subject area in the summer of 1977). Thus, 85% of all Survey respondents desirous of CE participation "in the next two years" were not then currently participating, and the percentage of those wanting to participate in each subject area who would by doing so become "newcomers" to CE was:[9]

General education	100%	Arts & crafts	82%
Voc'l: auto & engine mechanics	100%	Recreation	81%
Voc'l: services & other	100%	Health	79%
Voc'l crafts & machine operation	94%	Sciences, math, etc	76%
Social sciences & humanities	91%	Education	70%
Law, law enforcement	84%	Bible studies, religion	53%
Business	83%	All other subjects	82%

The previous two data lists would seem to contain both a paradox and, for those who wish to encourage participation in continuing education, a challenge. The subject areas with the highest potential near-term growth rates are disproportionately attractive to those not currently participating in any type of CE. Yet it is probably much more difficult to motivate current non-participators to participate than to maintain the participation of current participators. Indeed, it is likely to be much more difficult simply to convey information about CE opportunities to those not currently participating than to those who are.

The Group Basis of Desired CE Activities

Table V-C conveys information about the distribution of potential CE participatants (1) in each subject area among demographic and socio-economic groupings, and (2) within each group according to their most preferred CE subject areas.

The first type of data (the figures to the left under each subject column

heading in Table V-C) describes the group structure of the potential demand for each subject area. The data assist in locating, in socio-economic as well as geographical 'space', the potential clients for each CE subject matter topic. These data permit CE providers to "lead to strength," if they so choose. For example, given that virtually all (94-95%) of those most desiring CE business subjects are apparently under the age of 55, existing offerings of business courses virtually anywhere in the state might be designed primarily for those under 55 years of age--as might the publicity for such courses. On the other hand, because one-fourth or more of those interested in arts and crafts or social sciences-humanities offerings are 55 or older, other things remaining the same, such programs ought to be designed and publicized with older as well as younger citizens in mind.

The second type of data in Table V-C (the figures to the right, in parentheses, under each subject heading) assists in the determination of the existence and strength of statistical relationships, if any, between socio-economic and demographic attributes of Mainers who desire CE and the subject matter area they most want to pursue. These data would help CE providers decide what kinds of subjects to offer (or not to offer) given the availability of--or the responsibility to or for--a given clientele group.

The relationships between potential CE participators' group attributes and the subject matter of their most desired CE activity are generally pale images of the relationships (described above) between current participators' group attributes and the topics of their CE activity. There is no association in either case between region and CE topic. However, while there is no statistically significant relationship bwtween size of community and subject of current CE participation (see Table V-B), there is a statistically significant but very weak relationship with respect to community size and desired subjects of potential participation (see Table V-C).[10] The most interesting

TABLE V-C
TOPIC OF "MOST DESIRED" CE ACTIVITY (Q4), MAINE-WIDE AND WITHIN SELECTED GROUPS

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%. * = Less than 0.5%

	Business		Arts & Crafts		Social Sciences & Humanities		Sciences, Math, etc.		Vocational Crafts & Machine Operation	
	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)
All desiring CE		(19)		(18)		(15)		(9)		(9)
Region										
Aroostook County	13	(22)	13	(21)	8	(11)	13	(10)	8	(6)
Washington County	2	(17)	2	(13)	2	(10)	4	(12)	4	(13)
H'cock, Penob., Piscat.	14	(15)	21	(21)	17	(14)	11	(5)	15	(7)
Nine central counties	43	(20)	31	(14)	45	(17)	43	(9)	46	(10)
Cumberland & York	28	(18)	33	(21)	28	(15)	29	(9)	28	(8)
Size of town/city										
Less than 2,500	27	(15)	37	(19)	22	(10)	31	(8)	48	(12)
2,500-4,999	18	(17)	17	(15)	23	(17)	22	(9)	17	(7)
5,000-9,999	21	(21)	20	(19)	24	(19)	21	(9)	13	(6)
10,000-24,999	24	(25)	16	(17)	22	(19)	20	(10)	14	(7)
25,000 or more	9	(18)	10	(18)	9	(15)	6	(6)	9	(8)
Sex										
Men	44	(18)	18	(7)	35	(12)	65	(12)	99	(19)
Women	56	(19)	82	(27)	65	(18)	35	(6)	1	(*)
Ethnicity										
Franco-Americans	21	(23)	10	(10)	16	(14)	19	(9)	22	(11)
Age										
18-24	17	(21)	12	(14)	9	(9)	15	(8)	26	(14)
25-34	31	(17)	31	(16)	25	(11)	42	(11)	36	(9)
35-44	28	(24)	13	(11)	23	(16)	23	(9)	16	(7)
45-54	19	(25)	15	(19)	17	(18)	12	(7)	11	(7)
55-64	6	(10)	20	(35)	11	(17)	5	(4)	11	(9)
65-74	0	(0)	6	(29)	11	(47)	3	(7)	1	(3)
75 & older	0	(0)	2	(47)	3	(53)	0	(0)	0	(0)
Education										
8th Grade or less	4	(11)	5	(12)	10	(19)	1	(1)	11	(13)
9th-11th Grade	10	(19)	12	(22)	10	(16)	3	(3)	10	(9)
12th Grade	44	(21)	35	(16)	27	(10)	42	(9)	52	(11)
1-2 yrs. Post-high	23	(25)	14	(15)	18	(16)	26	(13)	15	(8)
3-4 yrs. College	16	(14)	25	(22)	24	(18)	23	(10)	9	(4)
Grad/professional school	3	(8)	9	(23)	12	(26)	5	(6)	3	(4)
Employment status										
Full-time	48	(18)	28	(10)	37	(11)	75	(13)	69	(11)
Part-time	12	(18)	23	(32)	13	(16)	3	(2)	4	(3)
Looking for work	11	(30)	3	(9)	5	(11)	4	(5)	15	(18)
Retired/disabled	2	(6)	12	(25)	16	(29)	6	(7)	10	(10)
Housewife	27	(23)	34	(27)	29	(20)	12	(5)	1	(*)
Family income										
Under $3,000	7	(18)	9	(22)	6	(14)	5	(6)	5	(6)
$3,000-4,999	6	(15)	5	(13)	15	(33)	5	(6)	3	(3)
$5,000-6,999	10	(20)	10	(20)	5	(8)	9	(9)	14	(14)
$7,000-9,999	14	(16)	17	(18)	14	(13)	18	(10)	16	(8)
$10,000-14,999	28	(20)	28	(19)	18	(10)	26	(9)	36	(12)
$15,000-19,999	15	(16)	17	(17)	25	(21)	15	(7)	12	(5)
$20,000 & more	20	(22)	13	(13)	16	(14)	22	(11)	15	(7)
(N--approx.)	(140)		(134)		(113)		(66)		(65)	

TABLE V-C
Continued, page 2

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%. * = Less than 0.5%

	Health %	(%)	Education %	(%)	Vocational Auto & Engine Mechanics %	(%)	Vocational Services & Other %	(%)	General Education %	(%)
All desiring CE		(8)		(5)		(3)		(3)		(2)
Region										
Aroostook County	9	(6)	3	(1)	25	(7)	8	(2)	17	(3)
Washington County	4	(13)	4	(7)	3	(4)	2	(2)	0	(0)
H'cock, Penob., Piscat.	21	(10)	23	(7)	29	(5)	20	(3)	17	(2)
Nine central counties	41	(8)	47	(6)	21	(2)	35	(2)	26	(1)
Cumberland & York	25	(7)	23	(5)	22	(3)	34	(3)	40	(3)
Size of town/city										
Less than 2,500	38	(9)	32	(5)	47	(5)	45	(4)	24	(1)
2,500-4,999	29	(11)	17	(5)	26	(4)	20	(2)	16	(1)
5,000-9,999	14	(6)	20	(6)	9	(1)	0	(0)	13	(1)
10,000-24,999	7	(3)	11	(4)	13	(3)	15	(3)	37	(4)
25,000 or more	12	(10)	19	(11)	5	(2)	20	(5)	10	(2)
Sex										
Men	14	(3)	51	(6)	97	(7)	26	(1)	47	(2)
Women	86	(13)	49	(5)	3	(*)	74	(3)	53	(2)
Ethnicity										
Franco-Americans	19	(9)	6	(2)	26	(5)	15	(2)	27	(3)
Age										
18-24	20	(10)	10	(3)	20	(4)	25	(4)	20	(2)
25-34	37	(9)	54	(9)	24	(2)	40	(3)	37	(2)
35-44	19	(7)	27	(7)	20	(3)	30	(4)	33	(3)
45-54	10	(5)	8	(3)	18	(4)	0	(0)	10	(1)
55-64	15	(11)	0	(0)	16	(5)	5	(1)	0	(0)
65-74	0	(0)	1	(2)	3	(3)	0	(0)	0	(0)
75 & older	0	(0)	0	(0)	0	(0)	0	(0)	0	(0)
Education										
8th Grade or less	3	(3)	4	(3)	15	(7)	7	(2)	49	(12)
9th-11th Grade	9	(8)	0	(0)	13	(5)	20	(6)	41	(8)
12th Grade	42	(8)	7	(1)	66	(5)	66	(4)	10	(*)
1-2 yrs. Post-high	18	(9)	11	(4)	6	(1)	1	(*)	0	(0)
3-4 yrs. College	28	(11)	52	(14)	1	(*)	7	(1)	0	(0)
Grad/professional school	*	(*)	25	(20)	0	(0)	0	(0)	0	(0)
Employment status										
Full-time	36	(6)	78	(9)	70	(5)	56	(5)	57	(2)
Part-time	15	(10)	5	(2)	9	(3)	6	(4)	0	(0)
Looking for work	8	(9)	4	(3)	6	(3)	0	(0)	14	(4)
Retired/disabled	4	(4)	1	(1)	15	(6)	8	(3)	0	(0)
Housewife	37	(14)	12	(3)	0	(0)	30	(4)	28	(2)
Family income										
Under $3,000	10	(13)	6	(5)	7	(3)	0	(0)	7	(2)
$3,000-4,999	6	(8)	0	(0)	6	(3)	13	(5)	0	(0)
$5,000-6,999	11	(11)	2	(1)	9	(3)	1	(0)	25	(5)
$7,000-9,999	20	(11)	7	(3)	12	(2)	36	(6)	41	(4)
$10,000-14,999	24	(8)	41	(?)	22	(3)	19	(2)	11	(1)
$15,000-19,999	14	(7)	22	(7)	28	(5)	15	(12)	0	(0)
$20,000 & more	16	(8)	22	(7)	16	(3)	15	(2)	16	(2)
(N--approx.)	(60)		(41)		(25)		(20)		(14)	

TABLE V-C
Continued, page 3

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%. * = Less than 0.5%

	Recreation		Law, Law Enforcement		Bible Studies, Religion		Other		(N)	
	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)	% ↓	(% →)		
All desiring CE		(2)		(1)		(1)		(6)	(756)	
Region										
Aroostook County	9	(1)	16	(2)	7	(1)	11	(6)	(147)	unwtd.
Washington County	9	(5)	0	(0)	2	(1)	2	(5)	(112)	
H'cock, Penob., Piscat.	39	(4)	15	(1)	19	(1)	16	(5)	(173)	
Nine central counties	43	(2)	32	(1)	21	(1)	50	(8)	(174)	
Cumberland & York	0	(0)	38	(2)	50	(2)	21	(5)	(156)	
Size of town/city										
Less than 2,500	44	(2)	36	(2)	29	(1)	42	(8)	(255)	
2,500-4,999	21	(2)	21	(2)	65	(3)	18	(5)	(155)	
5,000-9,999	21	(2)	5	(0)	7	(0)	28	(9)	(143)	
10,000-24,999	14	(1)	38	(3)	0	(0)	4	(2)	(130)	
25,000 or more	0	(0)	0	(0)	0	(0)	8	(5)	(72)	
Sex										
Men	54	(2)	75	(2)	57	(1)	55	(7)	(343)	
Women	46	(1)	25	(1)	43	(1)	45	(6)	(412)	
Ethnicity										
Franco-Americans	32	(3)	23	(2)	2	(*)	20	(7)	(129)	
Age										
18-24	3	(*)	27	(2)	17	(1)	14	(5)	(117)	
25-34	55	(3)	0	(0)	36	(1)	41	(7)	(254)	
35-44	16	(1)	41	(2)	21	(1)	19	(5)	(163)	
45-54	13	(2)	18	(2)	26	(2)	14	(6)	(106)	
55-64	13	(2)	14	(2)	0	(0)	7	(4)	(77)	
65-74	0	(0)	0	(0)	0	(0)	6	(9)	(27)	
75 & older	0	(0)	0	(0)	0	(0)	0	(0)	(6)	
Education										
8th Grade or less	5	(1)	0	(0)	0	(0)	19	(16)	(55)	
9th-11th Grade	14	(3)	12	(2)	0	(0)	2	(1)	(71)	
12th Grade	31	(1)	52	(2)	56	(2)	50	(8)	(298)	
1-2 yrs. Post-high	29	(3)	13	(1)	27	(2)	9	(3)	(126)	
3-4 yrs. College	14	(1)	0	(0)	7	(*)	14	(4)	(153)	
Grad/professional school	7	(2)	[illegible]	(5)	10	(2)	6	(5)	(52)	
Employment status										
Full-time	67	(2)	59	(2)	74	(2)	63	(7)	(372)	
Part-time	22	(3)	5	(1)	10	(1)	16	(8)	(90)	
Looking for work	0	(0)	7	(2)	0	(0)	8	(6)	(51)	
Retired/disabled	7	(1)	23	(4)	0	(0)	7	(5)	(62)	
Housewife	5	(*)	5	(*)	17	(1)	6	(2)	(162)	
Family income										
Under $3,000	6	(2)	0	(0)	22	(3)	6	(6)	(46)	
$3,000-4,999	0	(0)	10	(2)	22	(3)	11	(9)	(46)	
$5,000-6,999	7	(1)	0	(0)	16	(2)	9	(6)	(58)	
$7,000-9,999	3	(*)	23	(2)	13	(1)	18	(7)	(107)	
$10,000-14,999	43	(3)	7	(*)	0	(0)	20	(5)	(173)	
$15,000-19,999	42	(4)	28	(2)	0	(0)	17	(6)	(118)	
$20,000 & more	0	(0)	32	(2)	28	(2)	18	(6)	(112)	
(N--approx.)	(12)		(11)		(8)		(46)			

manifestations of this relationship would seem to be the relative absence, among those desiring CE in the smallest communities, of demand for business, social sciences and humanities courses, and a relative preference in those same communities for offerings in vocational crafts and machine operation--and Bible and other religious studies (see Table V-C).

Respondents' sex is statistically related to the subjects of their desired potential participation in much the same fasion it is to subject of current participation, and the relationships are of very similar strengths.[11] Among potential participants in CE, men are significantly more likely than women to want CE offerings in science, math, etc.; vocational crafts and machine operation; and auto and engine mechanics (but not in vocational services). Women, on the other hand, are more likely than men to desire future participation in arts, crafts and health CE activities (but not in Bible or other religious studies, unlike the findings regarding current participation).

While we found no statistically significant relationship between ethnicity and subject focus of current CE participation, a limited relationship exists between ethnicity and subject choice among potential participators.[12] Specifically, Survey respondents identifying as Franco-Americans are somewhat less likely than others to most prefer arts and crafts. And, while the data are not displayed in Table V-C, the potential demand for offerings in the social science-humanities category is relatively high among those of English descent. It is likely that the statistical relationships linking ethnicity and demand for specific CE subjects are in fact spurious rather than causal: it is hard to believe that (e.g.) it is the French-Canadian background (or identification with that background) of some citizens that is the cause of their preference for CE activities other than arts and crafts. Rather, that preference is likely to be caused by some other

factor (or factors) that are themselves statistically related to ethnic identification.

It is when we turn to the remaining group categories in Table V-C that we come to characterize the group attribute-subject preference relationships of potential participators as "pale images" of the relationships between such attributes and the subjects studied by current participators. Subjects of study of current CE activists, it will be recalled, are significantly and quite strongly related to age, income, education, and employment status. However, potential CE participators' family incomes are statistically unrelated to the types of subjects they say they would most like to learn about. And age, education, and employment status are only roughly one-half as strongly related to the topics of most desired CE activity as they are to topics of current CE participation.[13]

Nonetheless, the statistical relationships between these variables and the demand for CE topic areas are quite evident in Table V-C. Business subjects are listed as most preferred by disproportionate numbers of the Survey's potential CE participators: under the age of 55, with some high school to some college education, and/or who were looking for employment or were housewives. Arts and crafts topics were mentioned by greater than "chance" proportions of potential participators 55 and over and by those employed part-time, housewives, and the retired. And social science and/or humanities topics were selected as most desired by disproportionate numbers of potential CE participators 65 and over, with graduate or professional training, or who had retired.

Potential participators with at least a high school diploma and those working full time were disproportionately represented among those naming science, mathematics, and related subjects as the one that they "would most like to study or learn more about." Potential demand for vocational crafts and vocational services was higher among the young, those with less than a college education, and

those working full-time than among other groupings. However, the rate of demand for auto and engine mechanics courses is roughly equal across virtually all of the age groupings, while housewives and those with any college education largely ignored that topic.

Health subjects went almost unmentioned by potential CE participants 65 and over, but were chosen by others desirous of CE at rates unrelated to their education or employment status. While those selecting general education work were almost without exception under 45 and without a high school diploma, those selecting courses in education, per se, while also disproportionately under 45, tended to have three or more years of college or some graduate training.

The numbers of potential participators most preferring CE topics in the remaining substantive categories in Table V-C are really too small to produce findings of any statistical significance. However, it is interesting to note that none of the Survey's potential CE participators 65 or older selected as their most desired CE subject one included in the recreation, law, or religious categories.

Of course, many if not most CE planning decisions--decisions about what programs or courses to offer, for what audience existing courses should be designed, and where and with whom to publicize existing offerings--are likely to be made with regional (or even smaller) potential CE audiences in mind. However, the foregoing generalizations concerning (1) the near-term potential demand for each CE subject category, (2) the group structure of potential demand for each subject and the subjects disproportionally in demand within particular groups were derived from the CE Survey's state-wide sample data--and may or may not match those produced from any particular regional sample. Thus, those making planning decisions should probably also consult the reports developed from the individual regional samples, specifically the "regional" versions of Tables V-A and V-C.

The Demand for Credits and Credentials

Virtually all of those desiring to participate in continuing education had some particular type of subject or course of study in mind. And virtually all of them could decide whether or not they wanted "credit" toward a credential for their CE activity, and, if they did, the nature of the credential and its importance to them.

When asked (Question 13), "Would you want to earn credit toward a certificate or degree for the study you are interested in doing" (i.e., the topic of their most desired CE activity), 64% of the potential CE participants said "yes," 35% said "no," and only 1% weren't sure. Among those wanting such credit, the credential itself was much more important to some than to others: 38% said the credential was very important, 33% said it was important, 28% said "not too important," and only 1% weren't sure of its importance (Question 13a). When the responses to the questions eliciting the demand for credit and the importance of the credential are reduced to a joint distribution (and the few "not sures" are removed), we find, among those desiring CE, that

25% want credit; the credential is "very important"
22% want credit; the credential is "important"
18% want credit; the credential is "not too important"
35% do not want credit toward a credential.

Fewer than 2% of those desirous of credit toward a credential were unable to choose what type of credential they wanted. Table V-D provides a distribution of potential CE participants' preferences by the topic or subject the potential participants most wanted to learn about.[14]

Thirty-five percent of those desiring CE weren't looking for credit, and another 15% said they'd settle for a statement of satisfactory completion of their most preferred course of study (presumably if their work was indeed satisfactory!). Thus, about one-half the near-term potential demand for CE would bring with it only the most minimal demands for credentials--including 72% of

TABLE V-D

TOPIC OF MOST DESIRED CE ACTIVITY BY DEGREE OR CERTIFICATE, IF ANY, DESIRED

	Degree or Certificate Desired (Q13A-B)										
Topic/Subject Most Desired (Q4)	None	Statement of Satis. Complet'n	Teaching Certificate	Occupat'l Certif.or License	Hi School Equivalency,GED	Two-year Associate Degree	Four-year College Degree	Masters Degree	Other Grad/Prof Degree	Totals	(N)
All desiring CE	35%	15	5	14	5	5	9	9	3	100%	(750)
Business	29%	18	3	8	5	10	18	5	4	100%	(133)
Arts & crafts	60%	12	3	6	2	4	4	6	4	100%	(130)
Social sciences & humanities	39%	13	6	4	6	5	11	14	3	100%	(180)
Sciences, math, etc.	26%	18	10	10	0	8	11	13	5	100%	(62)
Voc'l crafts & machine operation	45%	16	0	31	0	2	5	2	0	100%	(64)
Health	16%	18	3	44	0	5	11	2	2	100%	(57)
Education	12%	2	12	5	5	5	10	37	12	100%	(41)
Voc'l: auto & engine mechanics	35%	19	0	31	4	4	8	0	0	100%	(26)
Voc'l: services & other	10%	24	0	38	14	10	0	5	0	100%	(21)
General education	27%	7	0	0	67	0	0	0	0	100%	(15)
Recreation	42%	8	17	25	0	0	0	8	0	100%	(12)
Law, law enforcement	0%	10	10	10	0	0	30	0	40	100%	(10)
Bible studies, religion	33%	0	0	0	0	0	0	50	17	100%	(6)
Other	43%	18	0	11	2	7	7	11	0	100%	(44)

the potential demand for arts and crafts courses and 61% of that for vocational crafts and machine operation work (but only 10% of the demand for law and law enforcement courses and 14% of that for education courses). About one in seven of those desiring CE wanted to work toward certification or licensing for a specific occupation--including one-third or more of those who most preferred work in one of the vocational education categories, nearly one-half (44%) of those desiring health courses, and a sizeable fraction (25%) of those desiring recreation courses. Five percent of the potential demand for CE apparently brings with it a demand for a teaching certificate or some other "public school credential," including significant fractions of the demand for recreation and education courses. Another five percent of Survey respondents--including, not surprisingly, most of those desirous of high school and GED courses--wanted credit towards a high school diploma. About one in seven potential participators wanted to work toward a two- or a four-year college degree, including more than one-fourth (28%) of those desiring business courses and nearly one-fifth (19%) of those wanting to take work in the sciences, mathematics, etc. Finally, roughly one-eighth of the potential demand for CE apparently brings with it an expectation of credit toward a master's or some other graduate degree, including nearly one-fifth of the demand for science, mathematics, social science, and humanities courses; two-fifths of that for law or law enforcement studies; one-half of that for education courses; and most of the miniscule demand for religious studies.

The demand for credit toward a credential for future CE participation, the importance to potential participators of the credential, and the types of credentials desired all vary somewhat among the five regions. Readers are referred to the regional reports for such data, as well as for abbreviated regional versions of Table V-D.

The Demand for Ancillary Services

In addition to the potential demand for specific types of continuing education subjects, for credit toward credentials, and for specific kinds of credentials, a demand apparently exists for what we have called 'ancillary CE services'--including several kinds of counseling and testing as well as other types of programs and facilities that usually accompany traditional education.

We cannot determine the strength of potential CE participants' desires for these services, nor do we know how much participants might be willing to 'pay' for them. What we do know about the potential demand for these services is that, when presented with a list of 11 services "that could be provided by an adult education program," and then asked "Which services do you think you might be interested in using?" (see Question 15), Survey respondents who had earlier indicated a desire to participate in CE provided the responses summarized in Table V-E.

We have distinguished respondents both desiring and currently participating in CE from the larger group of all desiring CE (see the left-hand pair of columns in Table V-E). This distinction is introduced here in order to determine whether the translation of a substantial proportion of the total potential demand for CE into actual participation in CE would likely bring disproportionate increases in the demand for some (or perhaps all) of the ancillary services. The data suggest that this is not likely to occur. Only with respect to the demand for "education and career counseling" is there a statistically significant difference between the potential demand from current CE participators who want to continue (23% indicating they'd like to have counseling) and the level of demand for that service from all respondents desirous of CE (33% so indicating).[15] This finding suggests

TABLE V-E

POTENTIAL DEMAND FOR ANCILLARY CE SERVICES: PERCENTAGE EXPRESSING INTEREST IN USING INDICATED SERVICE

Ancillary CE Service (Q15A-K)	Among All Desiring & Participating in CE	Among All Desiring CE	Among Those Whose Most Desired CE Topic/Subject Is: Business	Arts & Crafts	Soc. Sci. & Humanities	Sciences, Math, etc.	Voc'l Crafts & Mach. Oper.	Health	Education	Voc'l: Auto & Eng. Mech	Voc'l: Services & Oth	General Education	Recreation	Law, Law Enforcement	Bible Studies & Religion	Other
A course or other learning program	68	69	70	71	69	67	61	74	76	61	60	70	71	75	57	72
Training in basic skills--reading, writing, arithmetic	10	15	14	10	17	16	16	12	12	29	5	61	11	16	21	12
A place to study	19	21	23	22	18	25	15	13	8	36	30	24	27	29	28	18
Discussion of educational/career plans with a staff member	24	31	40	20	23	21	21	45	45	22	50	43	22	54	10	32
Education and career counseling	23	33	36	22	33	23	24	37	44	37	60	37	17	41	19	39
Information about educational opportunities--where to find, apply, etc.	33	36	43	40	37	27	23	36	31	29	50	53	22	29	17	32
Evaluation of life experiences for possible college credit	27	23	26	14	25	25	22	26	32	9	15	21	43	57	48	18
Testing to obtain advanced standing in a program of studies	35	32	29	23	28	33	24	43	38	35	35	47	22	75	38	42
Testing of strengths and weaknesses in various subjects or skills	36	40	44	38	36	40	32	42	39	42	35	41	36	46	33	40
Assessment of personal competencies--personal growth, potential, etc.	44	46	41	48	44	46	47	53	40	47	40	51	43	62	57	42
Putting together a record of all learning and job experiences	40	35	37	33	28	38	25	39	38	51	40	37	14	34	21	40
(N)	(119-120)	(770-773)	(138-140)	(133-134)	(110-112)	(66)	(62-64)	(59-60)	(41)	(25)	(20)	(14)	(12)	(11)	(8)	(43)

(but only suggests) that future increases in actual participation in CE in Maine may bring with them a more than proportional increase in the demand for educational and career counseling.

About one-third (35%) of those desiring CE expressed an interest in the 'typical' ancillary service. But there is considerable variation around that average. Over two-thirds (69%) of all potential CE participants would like to have "a course or other program of learning." (The alternative would presumably be a much less structured type of "learning activity.") The fact that the level of demand for the more structured "course" or "program" approach to CE is about the same among those desiring and currently participating as it is among those desiring but not participating might indicate that a rapid increase in CE participation would not require (from the standpoint of CE 'consumer' preference alone) a massive switch to less structured CE offerings and activities.[16] Indeed, the relatively high level of demand for "a course" or other learning "program" suggests that the structured CE approach those terms would seem to imply should not be considered an "ancillary" service, but rather a basic and desirable attribute of CE in the eyes of the substantial majority of current and potential future participants in CE.

Only one other service listed in Table V-E attracted substantially above-average demand: "assessment of personal competencies--personal growth, potential for living a more productive life, and so forth." Two of the ancillary services "offered" to respondents produced substantially below-average demand levels: "training in basic skills--reading, writing, arithmetic" and "a place to study." Nonetheless, the proportion of potential CE participants who in effect accepted a hypothetical offer of training in 'basic skills' (15%) is three times as large as the proportion who volunteered an interest in general

education-type courses when asked for the kinds of CE activity in which they'd like to engage (i.e., when asked Questions 4 and 5). And the 15% potential demand rate for the basic skills training service translates into a substantial absolute potential demand: as estimated 45,000 adults, statewide, recognize a personal need for improvement in the "three 'r' skills"--and look to continue education as a suitable vehicle for such work.

In similar fashion, the apparently low potential demand rate for "a place to study" (21%) should not obscure the relatively large absolute number of people who comprise that demand--and estimated 65,000. Of course, some of this potential demand might be perfectly satisfied with "a little peace and quiet" for study at home. But some of the demand may reflect a desire (perhaps an important need) for study facilities elsewhere, perhaps at a location at or convenient to certain needed educational resources (libraries, laboratories, etc.). Thus, if the costs of meeting a substantially increased CE demand (even one in which "only" 21% would like a place to study) are not to be substantially inflated by the need to invest in physical plant, it will be necessary to make better use of existing public and private facilities suitable for CE participants' study activities.

Table V-E also presents the demand rates for each of the ancillary services for potential CE participants grouped by their "most desired" subject. Note that a statistically significant relationship exists between subject most desired and demand for ancillary services with respect to five of the eleven services.[17]

Not surprisingly, the demand for "training in the basic skills" is four times as high among those desiring general education courses (61%) than among all potential CE participants. But the demand for help in such skills is also considerably higher among those most wanting to study auto and engine mechanics (29%) than in other groupings.

"Discussion of educational and/or career plans with a staff member" is a service desired by almost one-third of all potential CE participants, but by over one-half of those desiring CE work in law or law enforcement, and vocational services training, and by 45% of those most preferring health or education topics. On the other hand, only 10% of those desiring religious studies are interested in this type of counseling.

Nearly one-fourth (23%) of all respondents desiring CE also wanted an "evaluation of their life experiences for possible college credit." Substantial variation from this overall rate was found among those desirous of CE courses on law or law enforcement (57%), religion (48%), recreation (43%), and, at the low-end of the demand rate scale, those wanting a learning opportunity in auto and engine mechanics (only 9% in that group were looking for college credit for "life experiences").

Interest in being tested in order "to obtain advanced standing in a program of studies" was considerably higher among those desiring CE study in law and law enforcement (75%) and general education (47%) than among all desiring CE (32%).

Finally, the "putting together (of) a record of all learning and job experiences" is a service of interest to 35% of all desiring to participate in CE, by 51% of those most interested in auto and engine mechanics, but by only 21% of those wanting to study religion and 14% of those interested in CE work in recreation.

The data in Table V-E, and in the similar tables in the regional versions of this report, should help CE planners and providers by suggesting (1) what kinds of ancillary services are in greatest demand, (2) what types of services might be offered in order to help attract students for particular types of courses, and (3) what types of courses are likely to bring with them unusually high (or low) demand for particular services.

NOTES ACCOMPANYING SECTION V

[1]Given the small number of 'current participators' in the sample (n = 166, of whom there are data on subject of participation for 160 (see Table V-A)), estimates of the number of participators in each subject matter area Maine-wide are subject to considerable sampling error. To allow for that error (and clustering effects), we place 95% confidence limits around the Table V-A estimates. Thus, we obtain (in thousands of current participators): business, 4.7-11.3; arts and crafts, 4.8-11.4; education, 4.0-10.2; social sciences and humanities, 2.3-7.7; science, etc., 3.2-9.2; vocational crafts and machine operation, 0.1-4.1; health, 3.0-8.6; vocational: auto and engine mechanics, scant-3.8; vocational: services and other, scant-1.0; general education, scant-2.8; recreation, scant-3.9; law, law enforcement, scant-2.7; Bible studies, religion, 2.5-7.9; and other, 5.4-12.2.

[2]The difference between the sum of Table V-A's subject category estimates of current CE participants state-wide (62,700), and the initial estimate, in Section II, of the number currently participating (65,000), is due to interviewer failure to ask a few of the current CE participators about the subject matter of their current activity.

[3]The chi-square ($\underline{x}^2$) significance levels, and Cramer's $\underline{V}$ coefficients, for the group attribute-CE subject matter associations are, among current CE participators: sex, .0001, .53; employment status, .0001, .44; education, .0001, .40; income, .01, .37; and age, .05, .33.

[4]The difference between the total of Table V-A's "most desired" subject category estimates for those desiring CE, 296,400, and the estimate, in Section II, of the number of adults desiring CE state-wide, 304,300, is due primarily to the uncertainty of some potential participators identified in the Survey regarding the subject(s) they would like to study, and in part to interviewer failure to ask a few of the potential CE participators what type of CE activity they would prefer.

[5]When 95% confidence limits are placed around the state-wide projections of "most desired CE subjects" (including allowances for both sampling error and the effects of clustering), the estimate ranges become, in thousands of adults: business, 45.4-64.4; arts and crafts, 43.3-61.7; social sciences and humanities, 35.7-52.9; science, math, etc., 19.2-32.6; vocational crafts and machine operation, 19.0-32.2; health, 17.4-30.4; education, 10.6-21.4; vocational: auto and engine mechanics, 5.5-14.1; vocational: services and other, 6.0-11.6; general education, 1.9-8.3; recreation, 2.1-8.1; law and law enforcement, 1.4-7.2; Bible studies and religion, 0.6-5.6; other, 12.4-23.8.

[6]The absolute increases are the remainders from the subtraction of the estimates in the sixth column from the estimates in the second column of Table V-A. The relative increases result when the remainders are divided by the column six estimates.

[7]The highest "continuity rate" across the 14 general subject categories is that for "business"--about 60%.

[8]Our comparison and analysis of the potential and the current demand for religious subjects of CE study are difficult in part because the CE Survey's samples of CE participants, current and/or potential, are very small. We suspect that our estimates of such participants are too low, that many respondents currently and/or wanting to take part in Bible and other kinds of religious study may not have mentioned such study because they did not think of it as a "learning activity." Further caveats must be appended to an analysis of the "continuity" and "newcomer" components of the potential demand for religious (or any other) subject area because of ambiguities in the wording of one of the key questions in the Survey instrument. That is, we cannot be certain that current participators in any type of CE activity (i.e., those answering Question 2 in the affirmative) would necessarily respond in the affirmative to Question 3 even if they wish in the future to continue to study the subject area of their current CE activity. That is, to some the words "some form of further learning activity" (Q3) may imply a form (i.e., a subject area) different from that in which they are currently involved.

[9]The statistical association between "newcomer" status and subject area is significant (x^2 is significant at the .0001 level) and moderately strong (V = .23).

[10]The chi square test of the significance of the community size-desired CE subject relationship is significant at the .02 level, but V = only .17.

[11]The relationship between respondents' sex and their response to Question 4 is significant at the .0001 level, and V is a strong .50 (cf. note 3, this Section).

[12]When ethnicity (Question 45) is categorized as previously described (in Section III, note 6), the chi-square test for the significance of the relationship between ethnicity and subject of "most desired" CE activity is significant at the .02 level; V = .16.

[13]The x^2 significance levels, and Cramer's V coefficients, for the group attribute-most desired CE subject relationships are, among potential CE participators: age, .001, .17; employment status, .0001, .23; and education, .0001, .24 (cf. note 3 of this Section).

[14]The relationship between CE subject most desired (Q4) and type of credential desired (Q13b) by those wanting credit is both statistically significant (chi-square is significant at the .0001 level) and fairly strong (Cramer's V = .31).

[15]The difference is significant at the .05 level (chi-square test), but the relationship between current participation in CE and the demand for educational and career counseling (among those desiring CE) is not very strong (V, r, and Phi = .09).

[16]The discussion in Section VI of potential CE participants' views as to the most appropriate means or medium for the acquisition of their desired CE activity casts some light on the amounts and types of "structure" they might prefer in those activities.

[17]The five ancillary services, and the $\underline{x}^2$ significance levels and $\underline{V}$ coefficients describing the service-subject of desired CE participation relationships, are: "training in basic skills," .002, .22; "discussion of educational and/or career plans," .002, .19; "evaluation of life experiences for possible college credit," .0001, .21; "testing to obtain advanced standing in a program of studies," .0001, .23; and "putting together a record of all learning and job experiences," .0002, .20.

VI. WHERE AND HOW: PREFERENCES FOR TYPES OF LOCATIONS AND MEDIA OF PRESENTATION

Both where--at what kinds of places, and how--through what media, continuing education activities are in fact made available to Maine citizens, and are perceived by citizens to be available to them, undoubtedly very strongly affect the current demand for CE, the potential demand for CE, and the extent to which that demand will be satisfied. This is the case because different locations and media have different costs and benefit consequences for potential participants.

Indeed, if the decision to participate in CE, or the development of a desire to participate in CE, are similar to the decision processes regarding participation in "traditional" post-secondary education and those relating to the use of discretionary time, then the type of place at which, and even the medium through which, CE is to be obtained may be a more salient consideration to some people than the participation itself, not to mention the specific subject matter of that participation. For some participants, locations and/or media of presentation of CE may be the instrumental means for obtaining CE; for others, they may be means to some other ends; and for still others, locations and media may be, if not the ends, then at least elements that are valued in substantial part for themselves. In any case, where and how citizens perceive they can obtain CE and would prefer to obtain CE must be considered as facets of the demand for CE for the simple reason that few CE participants and potential participants are indifferent to such matters.

The Demand for Various Types of CE Locations

Of the many ways in which we might analyze Maine citizens' preferences for the type of location at which to engage in a CE activity, we shall focus upon just three: the locations of the learning activities of current CE participators, i.e., the current actual demand for types of CE locations; the preferred locations

of the learning activities of potential CE participants, i.e., the potential demand for types of CE locations; and the preferred locations of potential participators according to the subject area of their "most preferred" CE activity. These data, in turn, permit us to address a number of questions to which CE planners, sponsors, and providers might find it useful to have answers:

1. What CE locations face the greatest relative and absolute increases in potential demand?

2. In which type(s) of location(s) might new activities in a given CE subject area be offered if the sponsors or providers of that activity are to take advantage of the existing location preferences of potential CE participants?

3. In what subject areas might providers of CE activities at particular kinds of locations specialize if they are to take advantage of the existing distribution of locational preferences, i.e., if those providers are to maximize the results of their existing comparative (if not absolute) locational advantages?

4. Given that a particular CE subject matter activity has already been put in place at a particular type of location, how big a CE consumer educational program may be necessary to convince potential participants in that activity to engage in it at that type of location? That is, how much effort may be necessary to overcome consumer resistance to the type of location at which a desired CE activity is being offered?

Current and Potential Future Demand for Types of Location

Measures of demand. The measure of current actual demand for types of CE locations is based on the responses of current participators to Question 2b: "Where are you doing this?" (i.e., where were they engaging in the CE activity in which they were involved in the summer of 1977). Each response was coded into one of seven specific types of places or an eighth residual category ("other"). The frequency of responses in each category may be found in the top row of Table VI-A.

Our measure of potential demand for types of CE locations employed in this report is only a bit less straight-forward operationally. Survey respondents classed (through Question 3) as potential near-term CE participators were eventually asked Question 8: "There are many places people can go to study or learn.

Which of the following locations would you consider appropriate for your learning needs?" Then respondents were handed a card listing 11 types of locations and a 12th residual category, "other"; were asked to mention the types of locations they deemed "appropriate"; and, if they mentioned more than one type, were asked (Question 9): "Now, which of those locations would be most appropriate for you?" In this way we obtain two measures of each potential participant's preferences regarding CE location: (1) whether he deemed a given type of location to be appropriate, and (2) which type of location was deemed the "most appropriate" of those the respondent indicated were "appropriate."

Although both of these measures of preference for location are unsatisfactory from a conceptual standpoint,[1] we use both--with the second measure, the "most appropriate" location, as the measure of the potential demand for type of location.

Current and potential future demand compared. Table VI-A displays the CE Survey data on the locations of the CE activity of current participants in CE, and the locations potential participants considered "most appropriate" for their future CE activity. Because of differences in sample size, there are fewer types of locations represented in the distribution of location of current CE activity than in the distribution of future location preferences. However, we have combined (with brackets) several of the categories in the latter distribution so that it may be more easily compared with the former.

Because of our small sample of current participators, the Table VI-A estimates of the numbers of Maine adults currently involved in CE activities at each type of location may be substantially afftected by sampling error. Nonetheless, the "private home" is clearly the single most common location for current activity, with nearly one-third (32%) of the current participants carrying out their activities there, an estimated 17,200 people state-wide. A

TABLE VI-A

LOCATION OF CURRENT CE ACTIVITY, "MOST APPROPRIATE" LOCATION FOR FUTURE CE ACTIVITY, AND CURRENT LOCATION AS A PER CENT OF FUTURE LOCATION

Location of Current CE Activity (Q2B)

	Private Home	On-the job	Univ. of Maine	Other College, University	Vocational Technical Institute	High School Jr. High	Bible School, Church	Other	Total
%	32	13	15	10	3	8	5	14	100%
(N)	(44)	(18)	(21)	(14)	(4)	(11)	(6)	(19)	(139)

"Most Appropriate" Location For Future CE (Q9)

	At Home	At Work	Univ. of Maine	Private College or Univ.	Community or Junior College	Private Voc, Trade, Business School	Voc. Tech. Institute	Reg. Voc. Ctr.	High School	Adult Learning Ctr.	Other, Inc. Community Agency, DK	Total
%	17	13	20	6	2	3	10	3	11	9	7	100%
(N)	(127)	(97)	(154)	(46)	(14)	(24)	(75)	(19)	(80)	(66)	(56)	(758)
Current as % of Future												
%	35	19	14	23		3			14	20		18

University of Maine campus (15%, 8,200 people), "on the job" (13%, 7,000), and colleges and universities other than UM system units (10%, 5,500) are a distant second, third, and fourth in the current demand. Secondary schools (8%, 4,300), church buildings (5%, 2,300), and vocational technical institutes--VTIs (3%, 1,600), are less common current CE sites. The residual category contains 14% of the responses, projected to 7,400 people state-wide.[2]

The distribution of the locations deemed "most appropriate" by potential CE participators shows a University of Maine (any campus) site mentioned by 20% or 60,300 adults when projected to the state population; "at home," 17% (49,700), "at work," 13% (38,000), high schools, 11% (31,300); vocational technical institutes, 10% (29,400); "adult learning centers," 9% (25,800); private colleges and universities, 6% (18,000); private vocational, trade, and business schools, 3% (9,400); regional vocational centers, 3% (7,400); community or junior colleges, 2% (5,500); and all other, 7% (21,900).[3]

There are two statistically and, we believe, substantively significant differences between the two frequency distributions.

First, while only 3% of the current demand is being met in explicitly vocationally oriented locations, that type of institution is deemed "most appropriate" for their most desired learning needs by 16% of all potential CE participants. This finding is one of several in the Survey data that alert us to the tremendous growth potential for part-time adult educational offerings at at such vocational institutions.

Second, potential participants may typically be much less interested in home-based CE activity than are current participants. While one-third of the current CE activity takes place there, only one-sixth thought the home was the most appropriate location for what they would like to be learning. In fact, at least as many potential participants considered a University of Maine campus the most appropriate learning location as considered "at home" most appropriate,

and the home was essentially equalled in popularity as a CE site by the specifically vocational institutions. To be sure, the potential demand for in-home learning considerably exceeds the current demand in terms of the absolute numbers of people involved. Home learning may be the least expensive form of continuing education from the standpoint of both the CE participant and the CE provider. And television, principally public TV, is bringing innovative, effective, and inexpensive CE opportunities into virtually all Maine homes. Nonetheless, the data in Table VI-A suggest (they do not prove[4]) that at this time at-home training is, comparatively speaking, relatively less attractive vis-a-vis other locations among the 45% of all Maine adults who desire to participate in CE than it is among the 10% who already do. Further technical and programming developments in "educational" television could of course lead to changes in these attitudes.

Potential increases in demand at CE locations. The bottom row of figures in Table VI-A, "current as % of future," records the estimated current actual CE demand at each of seven major types of locations as a proportion of the estimated potential near-term demand at such sites. One might think of these figures in a very loose sense as the proportion of potential demand for each type of site that is currently being met there. These figures range from 35%, in the case of private homes, to 3% in the case of the explicitly vocationally oriented institutions. They suggest that a tremendous potential demand exists for CE activities at all types of learning locations. They also lead us to conclude that, in terms of the proportion of potential demand currently being met, the vocational institutions have, relatively speaking, the most impressive record in stimulating--and/or the least impressive record in meeting--demand for CE.

These conclusions are dramatically supported by the figures below. They

are CE Survey-derived estimates of potential increased near-term CE demand, both relative and absolute, at each of seven major types of CE locations.[5]

	Potential Increased Demand	
	Relative	Absolute
All explicitly vocational institutions. . .	+2,788%	+44,600
University of Maine (all campuses).	+635%	+52,100
High schools.	+628%	+27,000
At work (on-the-job).	+443%	+31,000
Adult learning centers; churches, libraries, & other community agencies; other. . . .	+392%	+28,000
Private, community, & junior colleges . . .	+327%	+18,000
At home (in private homes).	+189%	+32,500

Three limitations of these data should be emphasized. First, they are state-wide projections based on sample estimates; as such, they are subject to sampling error. Second, they are estimates of potential increases in demand, not estimates of likely increases in demand. That is, they represent our best estimate of how many more Maine adults would be engaged in CE activities at each type of location in the near future than are currently so engaged if every person who desires to participate in CE were to do so at the location they deem most appropriate for their learning needs. Third, the data are state-wide estimates; not even the relative increases can be assumed to apply, e.g., to a particular vocational institute, University of Maine campus, or high school. Our data do not permit such detailed estimates; however, estimates of potential demand for each type of location within each of five major geographic areas of the state are available in the regional reports of the CE Survey.

Preferred CE Locations and Preferred CE Subjects

Continuing education planners, providers, and sponsors may well find the data in Tables VI-B and VI-C as fascinating as any in this Maine-wide report. The two tables permit us to explore in detail the relationship, between the topic those desirous of CE would most prefer to engage in and their preferences regarding the location of that activity. Table VI-B is a cross-tabulation of

TABLE VI-R

"MOST DESIRED" TOPIC OF CE ACTIVITY BY "MOST APPROPRIATE" LOCATION FOR CE

Location for CE (Q9)	Among All Desiring CE	Business	Arts and Crafts	Soc. Sciences & Humanities	Sciences, Math, etc.	Voc'l Crafts & Mach. Oper.	Health	Education	Voc'l: Auto & Eng. Mech.	Voc'l: Ser- & Others	General Education	Recreation	Law, Law Enforcement	Bible Studies and Religion	Other
At home	17%	14%	21%	20%	10%	9%	9%	0%	23%	29%	47%	19%	6%	26%	19%
At work	13	17	7	5	14	22	25	9	20	9	0	2	8	0	14
Adult learning center	9	7	14	9	11	9	1	2	13	4	10	7	6	0	9
High school	11	11	16	11	7	5	13	0	3	10	37	8	0	0	13
Private voc., trade or business school	3	6	2	0	7	2	0	2	8	18	0	0	0	0	3
Community, Jr. college	2	5	0	1	5	0	0	4	0	0	0	0	0	17	0
Private college	6	8	7	6	2	0	1	11	0	0	0	0	19	41	10
Vocational technical institute	10	6	6	3	20	33	14	0	18	14	6	19	0	0	8
Regional vocational center	3	1	1	1	5	6	6	0	6	4	0	0	14	0	1
A University of Maine campus	20	22	11	30	17	9	26	60	8	9	0	21	31	17	20
Community agency, other, DK	7	3	14	11	3	6	5	12	1	4	0	25	17	0	2
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(758)	(138)	(131)	(111)	(64)	(63)	(57)	(39)	(23)	(20)	(14)	(12)	(10)	(8)	(44)

TABLE VI-C

TOPIC OF MOST DESIRED CE ACTIVITY BY APPROPRIATENESS OF EACH LEARNING LOCATION

		% Saying A Location Is "Appropriate" For Their Learning Needs Among Those Whose Most Desired CE Topic/Subject Is:													
Location (Q8A-K)	Among All Desiring CE	Business	Arts and Crafts	Soc. Sciences and Humanities	Sciences, Math, etc.	Voc'l Crafts and Mach. Oper.	Health	Education	Voc'l: Auto and Eng. Mech.	Voc'l: Services and Other	General Education	Recreation	Law, Law Enforcement	Bible Studies and Religion	Other
At home	47	44	50	47	50	47	44	49	50	55	57	55	12	57	34
At work	38	40	29	29	50	49	54	48	54	26	20	20	14	9	31
Adult learning center	57	57	59	64	59	55	55	46	50	53	61	57	23	66	59
High school	48	50	55	53	50	40	40	33	44	59	84	39	23	33	50
Private voc., trade or business school	44	55	28	32	59	63	44	25	62	54	38	41	34	40	52
Community, Jr. college	34	40	22	35	46	31	34	47	12	40	24	38	23	33	41
Private college or university	40	39	30	48	45	23	40	71	18	40	20	38	62	81	40
Vocational technical institute	42	37	27	28	65	80	51	26	62	43	24	41	34	40	46
Regional vocational center	32	33	21	25	43	52	31	22	46	48	24	41	30	33	39
University of Maine campus	51	57	34	59	60	38	56	89	26	46	24	49	52	53	48
Community agency	41	30	46	57	41	22	37	59	7	55	33	46	34	100	39
(N)	(745-751)	(138-140)	(133-134)	(110-112)	(64-66)	(62-64)	(59-60)	(41)	(25)	(19-20)	(14)	(11-12)	(11)	(7-8)	(43-44)

subject matter in potential demand by location in potential demand. It indicates the percentage of those most preferring a given topic area who find each of the alternative types of location "most appropriate" for their learning needs. Table VI-C employs the less restrictive measure of locational preference. It imports the proportion of potential participators most desiring a given CE topic who find a given type of location "appropriate" but not necessarily "most appropriate" for pursuing that topic.

The data in the two tables may be employed in a variety of ways. We shall demonstrate three of them. Specifically, we wish to illustrate how the data on CE location and CE subject matter preferences may be used to help answer three kinds of questions that might be raised by those in CE 'producer' roles. Where should a new activity be offered? Assume a sponsor or provider of a new CE activity (1) is in a position to choose the location(s) at which the activity is to be offered, and (2) wants to choose in a way that satisfies more rather than fewer potential participants in that activity. (We refer to this goal of satisfying more rather than fewer people as "'satisficing' a CE locational 'preference function'," if we may borrow--with apologies--terminology used by decision theorists.) How might the data in Table VI-B and VI-C be employed for this purpose?

First, we are able to reject the "null hypothesis" that potential participants in all subject areas would be equally satisfied no matter the type of location in which their activity was provided. We do so because there are statistically significant relationships between potential participants' favorite subjects and their favorite locations.[6] This being the case, we can say that an appropriate answer to the question, "Where should this new CE activity be located?," depends in part on what kind of activity it is, its subject matter.

To be sure, there are several potential CE locations which are in significant demand (deemed "most important" by significant minorities), and are thought to be "appropriate" locations by at least very substantial minorities, virtually without regard to the subject matter demanded. Thus, the "home" location is a reasonably attractive locational choice when providing all major types of CE subject matter except education (where none of those most preferring the topic thought "at home" the most appropriate location /see Table VI-B/--although 49% deemed it "appropriate" /see Table VI-C/, and law-law enforcement (only 6% considered home-study most appropriate here, and only 12% classed it as appropriate). By these same kinds of standards, the "adult learning center" reasonably 'satisfices' locational demand with the certain exception of law-law enforcement (where but 23% deem such centers "appropriate"), and the probable exception of education (2% deem adult education centers most appropriate, and only 46% consider them appropriate).[7] High schools and University of Maine campuses are locations of substantial preference across the subject matter categories. The high schools must be excepted from this generalization with respect to offerings in education, recreation, law-law enforcement, and religious studies; and the University campuses are in considerably less than average demand in general education, arts and crafts, and the three vocational categories.

But for the most part, the locations in highest demand by potential CE participants preferring one subject area tend not to be those most desired as locations for other CE activities. This generalization largely reflects locational specialization in CE subject matter offerings, a 'division of labor' among CE providers mirrored in citizens' perceptions as to which institutions are the most appropriate providers in those topic areas. For example, there are fairly obvious locations of preference for several of the subject areas.[8]

Clearly, the potential locational demand for education courses could be reasonably 'satisficed' if such courses were to be offered on University of Maine campuses (the most appropriate location in the eyes of 60% /see Table VI-B/--and an "appropriate" location according to 89% /see Table VI-C/--of those most desiring CE in education).

Similar, if slightly less-concentrated 'oligopoly' of preference would appear to exist with respect to general education and religion courses, although the small samples of those most preferring offerings in those subject areas force us to further qualify our conclusions. It would seem that general education courses offered at high schools (37% most prefer that location, 84% consider that location "appropriate"); through home study (47% most prefer, 57% deem it appropriate); or presented at adult learning centers (10%, 61%) ought to 'satisfice' location preferences for general education courses. And the locational pattern of the potential demand for Bible and other religious study would suggest that new offerings would likely reach the greatest interested audiences if presented at private college, University of Maine, at-home, or adult learning center locations.

Other but less clear-cut examples of the same phenomenon, viz., two or three locations varying from strongly preferred to acceptable--with the remaining locations unacceptable to substantial majorities, appear to exist for CE offerings in social sciences and humanities, vocational crafts, and auto and engine mechanics.

On the other hand, the sciences-math--and particularly the business and arts and crafts groupings, produce much less 'lumpy' demand patterns across the types of locations. VTIs, University of Maine campuses, adult learning centers, and "on-the-job" are each the "most appropriate" locations of from 10% to 20%, and "appropriate" locations for 50% to 65%, of all potential CE

participants who want science courses. However, all 11 types of locations were chosen as "most appropriate" by at least 2%, and thought to be "appropriate" by at least 41%, of those constituting the potential demand for science offerings. Four of the alternative locations were unacceptable to at least 60% of those looking forward to CE in business, and seven of the eleven types were similarly unacceptable to potential arts and crafts activists. And in neither of these cases was any one type of location "appropriate" (much less "most appropriate") to as many as 60% of those most desiring the topic area.

That the locational demand and preference patterns are less skewed toward one or a few types of institutions in the subject areas in greatest demand (especially arts and crafts, business, and sciences) may result from a number of causes. Perhaps these subject categories by their nature are less homogeneous than are most of the less popular subject categories. Perhaps different kinds of institutions have specialized in different kinds of offerings within each of the categories. Perhaps the high demand in each of these subject areas has led more and more (and, hence, a more diverse set of) CE-providing institutions to offer such courses--and perhaps the subsequent competition has caused providers to differentiate their services--leading, in turn, to a dispersed pattern of locational preferences among their existing and potential clientele.

What types of CE subjects should be offered at each type of location? Tables VI-B and VI-C report potential near-term CE participants' perceptions of the appropriateness of each type of location for the provision of the CE subject matter in which they have the greatest interest. Thus, the data may be of use to CE providers with responsibility for particular types of locations in their efforts to bring the supply of offerings in each general subject category into better balance with the potential near-term demand for such offerings at those locations. The data may also be of assistance in other aspects of the

general problem of utilizing existing and potential CE facilities and other resources at each type of location in a more efficient fashion.

How, specifically, might the data be used for such purposes? Let us assume that resources are available at a particular existing or potential CE location for investment in CE programs. The problem is to choose the subject areas in which those resources can be most efficiently applied. Our task here is to demonstrate how data on the relationships between subject preferences and locational preferences might help solve that problem.[9] In Section III we introduced the classic marketing approach of reinforcement, of "leading" or "playing to strength." In the present context that translates into a strategy concentrating the resources available for providing CE at a particular type of location on those CE subject matter areas in which that location has the biggest 'market share' relative to the shares for other types of locations--the widest 'competitive advantage'. We call this strategy one of "leading to competitive advantage." An alternative approach, based also on the general principle of "leading to strength," would call for concentration of effort, by a provider at a particular kind of location, in those CE topic areas in which that location has its largest absolute market shares--without regard to the shares of providers at other types of locations. This strategy we label "leading to comparative advantage." In many instances, the competitive and comparative advantage strategies lead to the same or much the same decisions. But, as we shall see, utilizing comparative advantage has broader applicability: unlike the competitive advantage strategy, it has something to say to providers who are not among the leaders in any subject matter field.

Thus, using the data in Table VI-B, University of Maine system campuses together may be said to enjoy substantial potential competitive advantages in the fields of education (60% of the potential participants believe a UM campus is the most appropriate site for CE in education, 48 percentage points ahead of

the potential demand for the second-ranking site); law-law enforcement (31% of those most desiring that topic selected a UM campus, 12 points more than any other site); social sciences and humanities (30%--10 points ahead of the nearest competitive type), business (22%, a five-point lead); and health (25%, an only one-point lead). If the alternative strategy of comparative advantage were used, the addition of effort in the health field would have a priority over effort in business.[10]

The data in Table VI-B would suggest that those with responsibility for providing home-based CE have potential competitive advantages in four subject areas. In order they are: vocational services (with 29% of those most desiring such subjects deeming home study most appropriate, 11 percentage points more than chose the second ranking site--private vocational schools); general education ("at home" having 47% of the preferred site "votes," 10 points more than high schools); arts and crafts (21%, five points more than high schools received); and auto and engine mechanics (23%, three points ahead). The comparative advantage strategy would emphasize the home location for offerings, in order, in general education, vocational services, Bible and religious study, auto and engine mechanics, and arts and crafts.

Providers of CE at types of locations which do not enjoy a competitive advantage in any subject area may nonetheless find use for data on the relationships between subject and locational preferences. Such providers are still in a position to exercise their comparative advantage. This they may do by using their CE resources to provide additional supply in those subject areas in which they are likely to do well, even if in no area are they likely to dominate. Thus, those responsible for managing the CE activities of community or junior colleges will find that, among potential participants most interested in pursuing courses in business, sciences, or education, such colleges are considered the "most appropriate" site for CE activities by miniscule but sig-

nificant proportions (4 to 5%, see Table VI-B), but are considered "appropriate" sites by 40% or more (Table VI-C). CE providers will find Tables VI-B and VI-C especially useful when used in conjunction with Table V-A which projects the absolute size of the demand for each subject area.

How much 'consumer resistance'? The relative attractiveness of one type of CE location to those potentially most interested in a given kind of program is seldom the sole determinant of the success of that program. Nor is probable popularity the only criterion employed when CE sponsors and providers decide whether or not a given type of subject should be offered at a particular kind of location. Put another way, even if only 7% of all Mainers who would like to participate in a CE course in auto and engine mechanics consider a church (or a library, YMCA, or other "community agency") to be an appropriate location for their CE interests, this does not mean that an auto mechanics course offered at (or even by) a church must necessarily be under-enrolled--much less that it shouldn't be offered at all. Thus, the data in Tables VI-B and VI-C may be more useful in alerting CE providers to the level of effort that may be necessary to successfully launch or maintain a given type of CE offering at a particular type of site than those data are in literally determining which subjects should and which should not be offered at a site. Table VI-B may be less useful than Table VI-C. The latter, afterall, provides data on what might be termed the "plausibility" of alternative types of CE locations for alternative kinds of CE activities. To have a chance for success, a site need not be the most acceptable location for a given kind of CE presentation. Nor, as we have said, need it be widely accepted as merely "appropriate." But if it is not deemed at least "appropriate" by a significant minority, the providers of that activity are going to have to invest substantial resources in making the offering "plausible." That is, they will have to change a location--from "inappropriate" to "appropriate," to change or convert unfavorable attitudes rather than simply to activate favorable ones.

By this standard, we suppose that those responsible for planning CE activities at "on-the-job" locations and, to a lesser degree, those at regional vocational centers, vocational technical institutes, and at community and junior colleges, should be most cautious in launching CE offerings in new areas. Fewer than 30% of those most interested in participating in arts and crafts, social sciences-humanities, vocational services, general education, recreation, law-law enforcement, and religious subjects view an on-the-job location as an appropriate location for such study.[11] The regional vocational centers and the VTIs suffer a similar potential burden with respect to existing and potential offerings in arts and crafts, social sciences-humanities, education, and general education. And the community and junior colleges are seen as "appropriate" for arts and crafts, auto and engine mechanics, general education, and law-law enforcement subjects by fewer than 30% of those most likely to participate in such work.

Even those responsible for planning expansion of CE activities at such generally "believable" CE locations as high schools and University of Maine campuses should probably be cautious at the margins of their traditional domains. High schools are not widely perceived as proper locales for the presentation of CE work in law-law enforcement or in education. And those who might wish to meet some of the tremendous potential demand for offerings in vocational crafts and in arts and crafts by developing new offerings in those fields on University of Maine campuses should understand that they face a credibility problem with 60% or more of the potential demand in those two subject areas (and with 75% of the potential demand in the fields of auto mechanics and general education).

Preferred locations and preferred subjects: limitations of the analysis. Inferring discrete relationships from grouped data is always a hazardous business. But that is precisely what we have done. Most of the CE subject

matter categories employed in Tables VI-B and VI-C include quite divergent types of interests. "Arts and crafts," as we noted in Table V-A, includes both fine arts and crafts; "Sciences, math, etc." includes both mathematics and electronics; and "business" encompasses accountancy as well as typing. Relationships between the specific subjects desired by potential participants and their preferences regarding the location of such activities is blurred by the aggregation of discrete subjects into gross subject categories. For example, the colleges and universities (public and private) come off rather poorly, in Table VI-C, with respect to evaluations of their appropriateness as sites for CE in arts and crafts. But if we were to separate those most desirous of work in the crafts from the fewer most interested in the fine arts, the institutions of higher education might come off as highly desired locales for the latter--while almost unanimously deemed inappropriate for the former. Thus, our analysis doesn't address the question of what <u>specific</u> CE activities might best be offered where.

As importantly, the state-wide sample data cannot address the question of what courses (specific or within general categories) might best be offered at what <u>specific</u> University of Maine campuses, private colleges, or VTIs, not to mention what specific towns or cities, high schools, churches, or libraries. Again, we have aggregated many individual locales into general <u>types</u> of locations. While most of the detail is lost (and must be if our analysis is to be treated statistically), some of the important detail is not: the five regional reports include abbreviated versions of Table VI-C. And, since it is likely that distances impose greater constraints on individuals' actual choices of CE locations than do relatively minor differences in the perceived "appropriateness" of alternative locations, those regional reports may be more relevant to many CE planners, sponsors, and providers than is the state-wide analysis.

Third, we have said nothing about the reasoning underlying potential CE participants' selection of the most preferred location for their most desired CE activity. Some insight on this question can be obtained by examining the frequency distributions of responses to Questions 9a and 10 (see Appendix A). However, description of the "whys" of most preferred site selection by CE subject categories must await further analysis of the CE Survey data.

Finally, in focusing on the locational preferences of those in each of the CE subject demand groups, we have overlooked the subject matter preferences of the locational demand groups,[12] not to mention other attributes of those groups. It is not unlikely that CE providers at the several types of locations would be interested in data on the demographic, socio-economic, attitudinal, and preference "structures" of those most preferring CE activity at each type of site.[13]

Preferences for Media of Presentation

No analysis of the demand for continuing education would be complete without a description of potential participants' preferences among the possible alternative media (or methods) by which the subject matter or activity might be presented and/or the participants' attention engaged. Afterall, as a "non-traditional" form, continuing eduation is generally associated with non-traditional media of education: with independent learning experiences, with correspondence work, with individualized instruction, and, more recently, with televised course (or even less formal) offerings. But CE is also associated with part-time learning experiences (a fact that led us to exclude all full-time students from the sample employed in this analysis), and with non-traditional educational service sites, sponsors, and providers. Thus, although the medium, location, sponsor, and provider of a CE activity are independent of one another conceptually,[14] they are to a degree associated empirically and perceptually. It is not surprising, then, that the CE Survey data touching on the demand for alternative media of CE presentation are derived from a set of items (Questions

7a-k, and 7A-1) in which medium, location, and sponsor are to a degree confounded. Nonetheless, those data would seem instructive in several ways.

First, four media of CE presentation clearly dominate the preference data in the left-hand pair of columns in Table VI-D. The most dominant medium, deemed "appropriate" to their learning needs by 66% of all those desirous of CE and the "most appropriate way" for them to learn by 31%, is one of the most traditional of all educational media: the "traditional classroom setting"! This finding complements several others noted above, viz., the high rate of demand for "a course or other program of learning" (see Section V) and the generally preferred position of University of Maine campuses among alternative learning locations (see above). Trailing "the classroom," but media in very substantial demand are a "combination of work experiences and instruction"[15]--considered "appropriate" by 60% and "most appropriate" by 16%, "on-the-job training--employer sponsored" (the most traditional of all forms of CE, historically speaking!)--52% and 23%, and "independent learning activities in consultation with an instructor, including such things as extension courses"--57% and 12%.

Second, two clusters of media now strongly associated with CE--correspondence study (along or in conjunction with radio or TV) and radio or television presentations (along or with periodic face-to-face meeting with an instructor)--are perceived as "appropriate" to their personal learning needs by only about one fourth of all potential CE participants, and as "most appropriate" by only relative handfuls of them. To be sure, roughly one-fourth of all those desirous of CE is not a small number in absolute terms--nor even are the much smaller proportions deeming correspondence work most appropriate--5%, a projected 15,300 people across Maine, or most preferring radio/TV courses--2%, representing a projected 6,700 people state-wide. And fully one-fourth of all respondents (26%, nearly 180,000 people when projected to the state's adult population)

TABLE VI-D

PERCENT INDICATING A GIVEN MEDIUM IS AN "APPROPRIATE WAY" FOR THEM TO LEARN; AND SUBJECT OF "MOST DESIRED" CE ACTIVITY BY "MOST APPROPRIATE" WAY TO LEARN

Medium of CE	% Saying Medium is "Appropriate" (Q7a-k)--among all Desiring CE	% Saying Indicated Medium is "Most Appropriate Way to Learn" (Q7A-1)														
		Among All Desiring CE	Business	Arts and Crafts	Soc. Sciences and Humanities	Sciences, Math, etc.	Voc'l Crafts and Mach. Oper.	Health	Education	Voc'l: Auto and Eng. Mech.	Voc'l: Services and Other	General Education	Recreation	Law, Law Enforcement	Bible Studies and Religion	Other
Traditional classroom setting	66%	31	33	25	41	49	23	22	39	21	28	44	24	5	43	25
Combination of work experiences and instruction	60%	16	13	15	8	17	15	20	26	24	4	24	27	29	0	16
On-the-job training--employer sponsored	52%	23	30	19	16	17	41	27	9	24	28	5	23	27	26	19
On-the-job training--union sponsored	16%	2	0	0	0	1	7	3	0	8	8	15	0	0	0	2
Courses taught over TV or radio at your home	22%	2	2	6	5	0	0	0	0	3	0	0	0	0	0	0
TV courses at home with periodic meetings w/instructor	27%	4	3	6	2	4	1	6	0	2	8	7	0	5	0	4
Correspondence study plus TV or radio instruction at home	21%	2	2	1	5	3	2	1	0	0	0	0	0	0	0	0
Correspondence study at home	27%	5	5	5	9	1	2	8	2	9	4	5	6	0	11	9
Independent learning activities in consultation w/instr.	57%	12	10	16	12	9	8	12	23	8	21	0	6	12	20	12
Private lessons	31%	3	2	7	2	0	0	1	1	0	0	0	12	21	0	13
Totals	--	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
(N)	(ca. 775)	(720)	(131)	(120)	(104)	(63)	(63)	(57)	(36)	(24)	(18)	(11)	(12)	(11)	(7)	(39)

said they "would . . . take a college course for credit based on a radio series or a TV series if it were available . . . for a small tuition charge" (Question 37). Nonetheless, the level of demand for either correspondence or the radio-TV medium (or a combination of the two) is low relative to the demand for the more traditional and labor- and physical facility-intensive methods. Thus, if a substantial proportion of the overall potential demand for CE is to be met, either the resource input (by students and/or providers and sponsors) will be enormous, or many of the new participants will have to settle for media or presentation they believe to be inappropriate to their needs, or many of those desirous of CE will have to be educated to the advantages of the less expensive forms of CE delivery--correspondence work and, particularly, radio and television.

Third, a statistically significant but fairly weak relationship exists between the demand for particular CE subjects and the demand for specific media of CE presentation.[16] The data in Table VI-D indicate that the traditional classroom setting is in significantly above-average demand among those most desirous of work in the sciences, mathematics, social sciences, and humanities. They also demonstrate the obvious: that employer-sponsored on-the-job CE activity is in significantly greater demand among those potentially involved in vocational crafts and machine operation training than it is among those most preferring CE in other topic areas.

Data on preferences for media of CE presentation, and on the appropriateness of the alternative media as seen by those most desirous of particular CE subjects, may be found in the five regional reports.

Having explored at some length the "wheres"--at what types of locations--potential participants are most interested in taking part in CE, at less length on "how"--through what media of presentation they prefer to obtain that education, we now turn briefly to a related dimension of the demand. When, specifically, during what part of the day do Maine adults interested in CE prefer to engage in such activity?

NOTES ACCOMPANYING SECTION VI

[1]Both measures are unsatisfactory from a conceptual standpoint for several reasons. First, the term "appropriate" (as in "which . . . locations would you consider appropriate . . . [Question 8]") muddies several important distinctions, most importantly for purposes of measuring demand, the distinction between a person's preference for location (a) considering only the perceived benefits of alternative locations (what might be termed an "unconstrained" choice), and the preference (b) after consideration of both the benefits and the costs of participation at alternative locations. A CE location may be very appropriate from the standpoint of curriculum, but inappropriate--unrealistic--in terms of the dollar, distance, and/or time 'costs' the individual would have to bear if he were to participate there. Consider, for example, the person who wants a particular kind of vocationally oriented course that is offered in precisely the form he wants it at a 100-mile distant vocational technical institute (VTI), but which is also offered, in much less satisfactory form, at, for example, a local high school. Which locations are "appropriate"? The VTI? The high school? Both? Neither? And which is "most appropriate"?

Second, the stem of the question used to measure locational preferences begins with the statement, "There are many places people can go to study or learn." The two infinitives are far from synonymous in the vocabulary of most Americans. To most, "studying" is only a subset of "learning," something one does in study halls, libraries, and in one's living quarters--at home or in a dormitory. To the extent that "study" rather than "learn" or "learning needs" became the referent of respondents' replies to Questions 8A-L, to that extent we will over-estimate preferences for the "at home" or "library" locations, and perhaps under-estimate preferences for the place of work as a potential CE learning site.

Third, we cannot be certain that, when answering Question 8, all potential CE participants in the CE Survey necessarily linked the term "learning needs" with "the one subject, topic or skill that you would most like to study or learn about" (Question 4). Yet, when we described the preferred locations of potential participators according to the subject matter of their "most preferred" CE activity, we must assume that virtually all of them in fact made that link.

Fourth, while the stem of Question 8 quite clearly refers to "places" and "locations," most of the locational options are also specific types of institutions. Some of these institutions, in turn, sponsor and/or provide CE activities at other locations. For example, the University of Maine may offer televised and/or correspondence courses that reach the CE participant in his or her home. A private business or trade school may run a course program at a work-place or even on the premises of a public institution which itself offers CE activities. Thus, there may have been some confusion in the minds of respondents between the site and the provider or the sponsor of CE activities. Our analysis could have benefitted from an even clearer site-provider distinction in the survey instrument--and from the collection of data with respect to preference for provider.

[2]Virtually all of the 14% placed in the "other" location category contained references to geographical locations (city, town, neighborhood) whose institutional referent could not be determined.

The estimates of the location of current CE participation, and the projections to the adult population state-wide, are subject to substantial sampling error. When we allow for that error and for clustering effects, we obtain the

following 95% confidence limits around the projections (expressed in thousands of people): private home, 12.9-21.5; on-the-job, 3.9-10.1; a University of Maine campus, 4.9-11.5; other colleges and universities, 2.7-8.3; vocational technical institutes, scant-3.2; secondary schools, 1.8-6.8; Bible school, church, 0.3-4.3; and other, 4.2-10.6.

[3]Because of the large size of the sample of potential participants, the allowances for sampling error and clustering effects are relatively small. Thus, the 95% confidence limits placed around the projected state-wide figures for most appropriate location are also rather small, ranging from 68,300 ± 9,800 people in the case of University of Maine campuses down to 5,500 ± 3,300 adults in the case of community or junior college sites.

[4]Convincing evidence is lacking for several reasons, among them the problem we have addressed in note 1 of this Section: The location of current CE participation (Question 2b) is a report of actual behavior, the actual choice of place constrained by reality. Preferences for location of future CE activities, as measured by Questions 8 and 9, may not be constrained in this way.

[5]The absolute increases are the remainders from the subtraction of state-wide (a) projections of the estimated current demand at each type of location from (b) projections of the estimated potential future demand at each type of location (location "most appropriate" to potential participants' perceived needs). The relative increases result when the remainders are divided by (a).

[6]The relationship between "most desired" topic of CE activity and "most appropriate" location for CE (Table VI-B) is significant at the .0001 level ($\underline{x}^2$ test) and of some strength ($\underline{V}$ = .21). With the exception of two locations--"at home" and "adult learning center"--the percent saying a given location is "appropriate" (but not necessarily "most appropriate") varies significantly (Table VI-C) with the subject the respondent most prefers (i.e., $\underline{x}^2$ test significant at the .05 level).

[7]The relatively high level of apparent acceptibility of the "home" location across virtually all of the subject categories may result, in part, from the use of the "study" in the question eliciting locational preferences (see note 1, above). The term "adult learning center" may generate its own apparent acceptibility as a learning location for almost any subject matter. For the overwhelming majority, the term has no specific institutional referent. It sounds like the generic name of <u>any</u> place to which an adult might go to learn something. Thus, there is no statistically significant difference, across the "most desired" subject groupings, in the proportions deeming centers "appropriate."

[8]In this discussion we ignore the residual subject matter category "other." While the "other" category is useful for some analytical purposes, it is not useful here. CE providers do not face the problem of deciding where to offer an activity dealing with "other."

[9]Maximizing the output from a given level of inputs to a given institution's CE program is a complex undertaking, which involves considerations in addition to the potential demand for various CE subjects at a particular type of location. One additional consideration would be other institutions' efforts to operate most efficiently. Another additional factor is the availability of properly

trained provider personnel in each subject area. These are but two of many other relevant considerations. However, this study focusses of necessity on only selected aspects of Maine citizens' demand for CE, and it deals with none of the aspects of supply. Thus, our analysis assumes that "all other factors are held constant." Those who would employ the type of analysis illustrated here in the solution of "real" CE problems will of course consider the factors which we of necessity ignore.

[10]Use of the data in Table VI-C produces slightly different results. The competitive advantage approach would have those providing CE at the UM system emphasize, in order, CE offerings in education, health, and business, and perhaps sciences and social sciences-humanities. The comparative advantage strategy would emphasize, in order of priority, offerings in education, sciences, social sciences-humanities, business, and health.

[11]The "appropriateness ratings" of the place of work for CE activity undoubtedly suffer from the fact that 31% of the Survey respondents who desire CE were not in the labor force and would, therefore, find that location an irrelevant alternative for any kind of CE activity.

[12]Those interested in determining the distribution of CE subject area preferences among those deeming a particular location "most appropriate" to their CE needs may do so by simple arithmetic manipulation of the data in Table VI-B.

[13]For example, among those desiring CE participation, the proportions desiring credit toward a credential for such participation are, by the location they deem most appropriate for their desired activity:

Community or junior college. .	90%	At home	62%
Private college or university.	80%	Regional vocational center.	57%
University of Maine campus . .	79%	High School	51%
Vocational technical institute	73%	Community agency, other, or "don't know" appropriate location.	47%
At place of work	68%		
Private vocational, trade, or business school.	62%	Adult learning center . . .	41%

Note that the relationship between type of location most preferred and demand for credit toward a credential is statistically significant ($\underline{x}^2$ significant at the .0001 level) and fairly strong ($\underline{V}$ = .23).

[14]For example, several alternative media or methods of CE program presentation--traditional classroom lecture, individualized instruction, radio or television presentation, and correspondence study--each may be offered at a variety of sites, financially supported, approved, and/or organized by a variety of sponsors, and actually led, taught, or run by a variety of providers. To take an extreme example, a TV-assisted vocational course sponsored by a governmental agency, may be taught by community college personnel in facilities provided by a private employer.

[15]A "combination of work experiences and instruction" is difficult to interpret as a medium of education in the context of a sample from which all full-time students have been removed and in which 69% of all those desiring CE are in the labor force. That is, anyone who is (or would like to be) employed

and desire CE on a part-time basis would almost by definition find "a combination of work experiences and instruction" appropriate to his or her learning needs. In this context, the word "instruction" has no specific CE media-type referent.

[16]The relationship is significant at the .0001 level (chi-square test), but Cramer's V for the table is only .17. It may be that the underlying relationship we have tried to measure is stronger in fact than it is when Survey responses to question 4 are related to answers to Question 7A-1. Specifically, the wording of Question 7 and 7A-1 (". . . as you know, there are a number of ways people can study or learn. Which of the following ways are appropriate for you /in view of your work and family commitments, life style and so forth/") does not provide a close enough tie between preferred medium and most desired CE subject.

VII. PREFERENCES FOR THE SCHEDULING OF CONTINUING EDUCATION

If the data relevant to other aspects of continuing education activities were as straight-forward as those regarding preferences for CE scheduling, the 1977 CE Survey results would have provided little new information to planners and providers of CE in Maine. Those at all familiar with current adult learning behavioral patterns in Maine will nod their heads in recognition as they examine Tables VII-A and VII-B. There they will find far more confirmations than contradictions of existing impressions. This may reassure most of them, but perhaps disappoint a few.

The evening is the preferred time of day for CE activity for over one-half (54%), and the morning for just over one-fourth (28%), of all Mainers indicating a desire for CE in the summer of 1977. Another 11% preferred the afternoon, and the remainder consisted of just over 2% who insisted on combinations of times (e.g., "Tuesday, Wednesday, and Thursday nights, afternoons on weekends"), plus over 5% who had no preference (see Table VII-A).

If we may assume that the scheduling preferences of potential participants who are also current participants are the same, by and large, as their current schedules of CE participation, then we may utilize the Survey data (the first two rows of data in Table VII-A) to reason to what may be a useful conclusion. If we accept the above assumption, then the distribution of scheduling preferences of all potential participants (which we have from the Survey data) does not differ from the actual distribution of current CE activities across the times of day (which we do not know directly from the Survey). If this conclusion is valid, its implications may be important. Specifically, it would suggest that if additions to the ranks of CE participants are random with respect to potential participants' scheduling preferences, then the current asymmetry in the demand

PREFERRED TIME OF DAY FOR DESIRED CE ACTIVITY (Q12), BY ALL DESIRING CE, BY THOSE CURRENTLY PARTICIPATING IN CE, AND BY ALL DESIRING CE AMONG SELECTED GROUPS

Percentages on left sum down to 100%; percentages on right, in ( ), sum across to 100%

	Morning ↓ (→)	Afternoon ↓ (→)	Evening ↓ (→)	Combinations, DK ↓ (→)	(N)	
All desiring CE	100 (28)	100 (11)	100 (54)	100 (8)	(770)	
All participating in CE	17 (30)	9 (6)	16 (53)	24 (11)	(122)	
Region						
Aroostook County	7 (18)	14 (13)	14 (67)	3 (2)	(152)	unwtd.
Washington County	2 (25)	4 (15)	3 (51)	3 (9)	(118)	
H'cock, Penob., Piscat.	18 (28)	14 (9)	18 (54)	22 (9)	(175)	
Nine central counties	38 (26)	42 (11)	41 (54)	47 (9)	(179)	
Cumberland & York	35 (35)	26 (11)	24 (47)	24 (7)	(152)	
Size of town/city						
Less than 2,500	32 (27)	29 (10)	34 (55)	36 (8)	(256)	
2,500-4,999	23 (31)	26 (14)	20 (52)	10 (3)	(157)	
5,000-9,999	18 (26)	21 (12)	19 (52)	25 (10)	(150)	
10,000-24,999	17 (27)	21 (13)	17 (53)	19 (8)	(136)	
25,000 or more	10 (31)	3 (4)	10 (57)	10 (8)	(71)	
Sex						
Men	36 (22)	32 (7)	51 (60)	62 (10)	(351)	
Women	64 (33)	68 (14)	49 (48)	38 (5)	(419)	
Ethnicity						
Franco-Americans	17 (27)	15 (9)	19 (59)	11 (5)	(131)	
Age						
18-24	18 (32)	16 (11)	14 (48)	19 (10)	(120)	
25-34	28 (23)	27 (8)	40 (64)	23 (5)	(260)	
35-44	27 (35)	20 (10)	19 (46)	25 (8)	(166)	
45-54	13 (26)	15 (11)	16 (59)	7 (4)	(109)	
55-64	7 (21)	11 (12)	9 (49)	23 (18)	(75)	
65-74	5 (37)	10 (30)	2 (30)	2 (3)	(29)	
75 & older	2 (74)	1 (10)	0 (3)	2 (13)	(6)	
Education						
8th Grade or less	5 (20)	11 (17)	7 (56)	7 (7)	(54)	
9th-11th Grade	12 (33)	11 (12)	9 (47)	10 (8)	(76)	
12th Grade	42 (30)	37 (10)	40 (54)	33 (6)	(303)	
1-2 yrs. Post-high	17 (28)	19 (12)	16 (53)	14 (6)	(127)	
3-4 yrs. College	18 (25)	17 (9)	22 (58)	21 (8)	(158)	
Grad/professional school	6 (27)	5 (8)	6 (47)	16 (19)	(52)	
Employment status						
Full-time	36 (20)	37 (8)	61 (65)	48 (7)	(379)	
Part-time	13 (29)	18 (16)	11 (48)	11 (6)	(92)	
Looking for work	10 (39)	3 (4)	7 (48)	9 (9)	(55)	
Retired/disabled	13 (42)	17 (22)	4 (27)	11 (9)	(64)	
Housewife	28 (36)	25 (13)	18 (45)	20 (7)	(163)	
Family income						
Under $3,000	7 (29)	6 (9)	7 (57)	6 (6)	(47)	
$3,000-4,999	10 (41)	12 (21)	3 (25)	14 (13)	(45)	
$5,000-6,999	6 (18)	18 (22)	10 (58)	3 (2)	(62)	
$7,000-9,999	19 (33)	21 (15)	15 (49)	8 (3)	(108)	
$10,000-14,999	26 (28)	14 (6)	29 (60)	25 (6)	(173)	
$15,000-19,999	14 (22)	14 (9)	19 (58)	30 (11)	(118)	
$20,000 & up	18 (30)	16 (11)	17 (55)	13 (4)	(114)	
(N)	(187-215)	(76-84)	(362-413)	(42-59)		

load--heaviest in the evening, lightest in the afternoon--will continue. This may be "good news" to those CE providers who utilize personnel and/or facilities in the evening that are not available to them during the day. It may be, if not "bad news," at least a "complicating phenomenon" for those attempting to level-out a CE activity load across all times of day.

Those seeking more fully to utilize personnel and facilities at all times of day, and/or to level out peak-period demand, may find the balance of the tabular data provided in this Section of some utility. Table VII-A provides data on the demographic and socio-economic structure of CE demand at alternative times of day (the numbers on the left side of each column of figures), and on the proportional demand rate for each time of day for each demographic and socio-economic grouping (the numbers in parentheses on the right-hand of each column).

The relationships between demographic and socio-economic group differences and CE scheduling preferences are few--and the few relationships are not very strong, by-and-large.

Size of community, ethnicity, and education are unrelated, statistically speaking, to scheduling preferences. And the only significant difference in scheduling preferences among potential CE participants categorized by region involves those in Aroostook County. They prefer an evening schedule in even greater proportions than do respondents elsewhere in the State.

The strongest of the relationships in Table VII-A involves the male-female differences in CE scheduling demand,[1] but it is a relationship confounded by sex differences in employment status. That is, men appear to prefer the evening for CE even more than do women, and women are more likely than men to prefer CE activity in the morning or afternoon. We suspect, of course, that further analysis would show that most (if not all) of that relationship is

spurious. That is, we hypothesize that one "real" cause of the apparent sex difference in scheduling preference is the considerably higher proportion of men than of women in the labor force during the day, that those in the labor force on a full-time basis disproportionally prefer an evening to a morning or afternoon schedule (as, indeed, 65% of them do), and that those of both sexes who are working full-time outside the home have similar scheduling preferences--including an overwhelming preference for evening CE offerings.[2]

Those who are retired are more likely to prefer a morning CE schedule than an evening schedule, and have a demand rate for an afternoon schedule which is twice that for potential CE participants as a group. Of course, retirement is related to age, and age itself is related to preferences regarding the time of day of CE offerings. Those 65 and older are significantly less likely to prefer an evening schedule, and more likely to prefer morning or afternoon activity, than are all who desire CE.[3] Note that the evening is an even more dominant preference for those 25-34 years of age than it is for older--or younger--potential participants. But this relationship, too, may be spurious. It may be that those 25-34 are simply even more likely to be in the day-time work force than are those of other ages--and, hence, to have more limited discretionary time during the day than others do.

Finally, there is a statistically significant but very weak relationship between family income and time-of-day demand patterns.[4] Those with incomes of $3,000-$6,999 appear to have a relatively higher preference for afternoon scheduling than do those in other income groups. However, here too we suspect spuriousness. Those over 65 years of age, and retirees, are both overrepresented in this income range, and more likely to find afternoons congenial for CE activities than are other groups.

These patterns of relationships lead to a suspicion that it is "really"

employment status and age (which are themselves related statistically and causally) that "cause" variation in CE scheduling preferences, and that they do so by affecting the availability of discretionary time for CE--and by generating (or failing to generate) a willingness (and in some cases an ability) to participate during the evening, especially if the participation is to be outside the home.

The data describing the relationship between topic of most desired CE activity and the time of day preferred for that activity is, if such is possible, even less startling than that dealing with group-scheduling relationships (see Table VII-B). There is no statistically significant relationship between CE subject and scheduling preferences, although by aggregating some of the similar categories one can wring some significant differentiation from the data.[5] Specifically, those most desiring vocational crafts/machine operation or vocational auto and engine mechanics are even less interested in morning or afternoon CE offerings, and more likely to prefer evening CE activity, than are potential participants preferring other topics. Whether this relationship is also spurious--whether, for example, it is largely a function not of CE topic preference but of age and employment status differences between those most preferring one of those two vocational topics and all other potential participants--is a question which might well be answered through further statistical analysis. Such analysis would consist of the application of multivariate statistical techniques designed to assist in separating spurious statistical relationships from those more likely to reflect something close to "causality." However, the application of such analysis to the data on scheduling preferences may be of marginal use, at best, to CE planners and providers in Maine--at least in the "short haul." Afterall, those in a position to act can already act on the basis of the data we have presented. For example, they might key their scheduling decisions and target their publicity for CE offerings to various groups on the

TABLE VII-B

TOPIC OF MOST DESIRED CE ACTIVITY BY TIME OF DAY PREFERRED FOR THAT ACTIVITY (Q12)

	Morning	After-noon	Evening	Multi-ple, DK	Totals	(N)
All desiring CE	28%	11	54	8	100%	(745)
Business	28%	8	57	7	100%	(140)
Arts & crafts	32%	11	46	11	100%	(134)
Social sciences & humanities	22%	18	53	7	100%	(110)
Sciences, math, engineering, etc.	35%	13	41	12	100%	(65)
Voc'l crafts & machine operation	14%	4	68	14	100%	(64)
Health	31%	13	53	3	100%	(58)
Education	32%	7	57	4	100%	(41)
Voc'l: auto & engine mechanics	12%	8	76	4	100%	(24)
Voc'l: services & other	33%	19	43	5	100%	(20)
General education	36%	14	50	0	100%	(14)
Recreation	8%	19	60	13	100%	(12)
Law, law enforcement	41%	29	25	5	100%	(11)
Bible studies, religion	31%	0	69	0	100%	(8)
Other	29%	2	65	4	100%	(44)

basis of the data in Tables VII-A and VII-B--as well as the parallel versions of those tables included in each of the regional reports. Additional data, such as the relationships between locational and scheduling preferences, can be obtained through the Social Science Research Institute. However, as we pointed out at the beginning of this section, the relationships described in the data will probably come as no surprise to those with the greatest interest in it.

NOTES ACCOMPANYING SECTION VII

[1]The relationship between sex and preferred time of day for participation in continuing education is significant at the .0001 level ($\underline{x}^2$ test); Cramer's $\underline{V}$ coefficient, measuring the strength of the relationship, is modest .19.

[2]The employment status-schedule preference relationship is significant at the .0001 level (χ^2 test); V is a very modest .15.

[3]The chi-square test of the significance of the age-schedule preference relationship is significant at the .0001 level; V is only .14.

[4]Chi-square is significant at .001, V again is only .14.

[5]The finding of no significant relationship between preferred CE subject and preferred time of day for CE is subject to a now-familiar caveat. Question 12, our "instrument" for measuring scheduling preferences, does not explicitly refer to the respondent's earlier preference for CE subject (Question 4).

VIII. THE INTENSITY OF DEMAND: WHAT WILL PEOPLE 'PAY' FOR CONTINUING EDUCATION?

We have estimated that if all adult citizens of Maine had been asked, in the summer of 1977, ". . . would you like to take part in some form of further learning activity?," over 300,000--45% of all citizens--would have said "yes."

That is an impressive figure. But we would be much more impressed if we knew that the 300,000 desired continuing education sufficiently strongly to pay the 'price' of their participation in it. How many Maine citizens desirous of CE are prepared to bear the time and travel distance costs of their own participation in CE? How many, in addition, are willing either to pay directly the entire monetary costs of their CE, or to pay a portion of those costs and to support public policy measures designed to subsidize the rest?[1]

We have no certain answers to these questions. We do know, however, that at least 65,000 Mainers are willing to pay these costs, for that is the estimated number of citizens who are currently actually participating in CE. That number does not, however, permit us to conclude that the roughly 240,000 Mainers who desire CE but aren't currently participating in it are not willing to bear the necessary costs. Afterall, there may be imperfections in the market for CE. For example, many citizens may be willing to bear the necessary costs but lack knowledge of where, in a sense, to 'pay them' in return for the CE service they desire. And CE providers and potential providers (public and private) may be 'under-producing' CE opportunities because they underestimate the demand for them and the prices citizens are willing to pay for them--directly and/or through public sector expenditures. Indeed, it is presumably because of a felt lack of information about the quantity and quality demanded, and the prices offered, by Maine citizens for CE that the Survey on which this report is based was originally commissioned.

And because of that Survey, we know a great deal more than we did before

about how many Maine adults want to participate in CE, what they want, where and how they want to get it, and, to conclude our analysis of the "quality" of CE demand, how much they are willing to 'pay' for it.

The 'Price' of Continuing Education

When mentioning the 'price' or the 'costs' of CE, we have hitherto used those terms in a very general sort of way. At this point, however, we must make some critical distinctions among alternative uses of the words.

First and less importantly, we distinguish between the total costs of an individual's participation in CE (the 'total cost' of CE) and the costs that individual is asked to pay (the CE 'asking price'). The former includes the costs of providing an individual with CE service that are borne by the sponsor and provider, net of any 'contribution' made by the participant, and the costs of the service that are borne by the participant, net of any 'contribution' made by the sponsors and/or providers. The asking price consists of the costs of the service that are borne by the participant, plus any sponsor's or provider's 'profit' in the transaction. These concepts, while crucial to the total question of the provision of continuing education services, are not central to this report. Indeed, no data on the total costs of CE are brought to bear in this report, nor are we able to say anything about the CE asking price except insofar as that price may be reflected in the prices some people are willing to pay for CE.

The more important pair of related concepts include, first, the objective price a citizen offers to pay for a particular CE activity. We call this the CE 'bid price'. Second, we must also consider the 'opportunity costs' to an individual of any particular asking price or of his bid price, that is, what the individual will have to forgo if he or she pays a particular objective price. 'Opportunity costs' are here defined broadly, to include all other

opportunities or necessities the individual will have to give up if he or she pays a particular objective price. Most of what we are able to say about the costs and the price of CE concerns the bid prices for CE in Maine, although we will occasionally refer here (and in the subsequent section) to the opportunity costs of participation.

When speaking of the total costs, the asking prices, and particularly the bid prices and the opportunity costs of CE, we think it is appropriate to include at least three cost dimensions: time, distance traveled, and money. All three are scarce resources. Time, travel, and/or money 'spent' for CE are resources not used for something else. Of course, it is frequently said that "time is money." And travel is, for some purposes, reducible to time and monetary components. But in the context of planning for the provision of CE services, we believe it is best to treat these three types of costs as if they were quite separate, as if they could not be reduced to a single (presumably dollar) metric.[2]

When cost dimensions are defined in this encompassing manner, CE asking and bid prices, as well as opportunity costs, become more realistic and fruitful concepts for discussion of CE, particularly the demand for CE, than they would if they included dollars only. For example, if we are to understand why it is that, in the face of a not inconsiderable supply of CE opportunities with very low or essentially zero asking prices in dollars, there exists such a huge apparent unfilled demand, the opportunity costs of CE--in all three of their dimensions--must be recognized. For example, two men would "love" to take a particular CE course at a local high school. The first, a retired person who lives a long distance across town on little more than Social Security and who feels he has nothing better to do with his time, pays a lower opportunity cost for the marginal hour of discretionary time he invests in the course, but a much

higher opportunity cost for the across-town trip and the $20 enrollment fee needed, than does the busy lawyer living a few blocks away. Both desire the CE opportunity but neither participates: the asking price exceeds the bid price for both--but for very different cost-related reasons.

It is the willingness to bear the costs, broadly defined, of CE participation--or to invest in the political activity necessary to shift some of the burden of these costs, that provides a good test of the 'quality'--the intensity--of a citizen's demand for CE. And it is only by learning about the quality of the demand in the aggregate and within specific areas and groups that CE planners and providers, in the private and the public sectors, can make informed judgments on the amount and kind of resources that properly ought to be invested in continuing education.

Measuring CE Bid Prices

All CE Survey respondents who indicated that they would "like to take part in some form of further learning activity" (Question 3), i.e., all of those whom we have hitherto labelled "potential CE participants," were asked, in effect, what they would pay for CE in terms of the travel distance and hours:

> How far would you be able to travel /one way[3]/ to take part in a learning activity, assuming that you would have to go there at least once a week? /Question 11/
>
> About how many hours per week can you afford to devote to your learning activities (meetings, travel, preparation)? /Question 14/

Travel distance was recorded by interviewers in discrete miles, but for purposes of presentation in this report we have reduced it to categories (0-4, 5-9, etc.). Time bids were recorded in six categories ranging from "less than five hours" to "40 hours or more." We employ only five time categories in this report, having included the "40 hours or more" in a "30 hours or more" category.

All potential CE participants who indicated a desire to earn credit toward

a credential for the "study" they "were interested in doing" (Question 13) were subsequently asked whether they would "need financial assistance for such a course" (Question 13c)--and then for the number of dollars they would bid for CE:

> On Card F are some amounts of money. What is the highest amount you would be able to pay for a course that meets three hours per week for roughly four months, or for some other educational activity that provides three units credit? /Question 13d/

Six amounts were printed on the card, ranging from "Am unable to pay anything for further education" to "$180 or more."

The foregoing measures of potential participators' travel, time and dollar bids for CE are not so adequate in retrospect as they may have appeared when designed. Their limitations range from the narrowly operational to the basic conceptual.[4] Nonetheless, we employ them in our description and analysis of CE demand. Indeed, measures like them or, better still, improved versions of them, must be included in any analysis of consumer/citizen demand for educational services if such analyses are to bear the slightest relationship to actual market behavior.

How Much Are They Willing to Pay?

Time. The upper-right-hand column of Table VIII-A1 provides a frequency distribution of the number of hours those Survey respondents desiring CE said they were willing to devote each week to participation in CE. About five of every six seemed to be offering "serious" time bids, i.e., at least five hours per week. Nearly one-half--46%, an estimated 140,000 adults when projected to the state-wide population--said they could devote at least ten hours a week to CE activity, a figure well over twice our estimate of the total number of Mainers currently participating in CE. One fifth of those demanding CE claimed they could spend 20 hours per week or more in CE, an indication that a sizeable number of citizens wish to devote the equivalent of a one-half to a full-time work week to part-time education.

TABLE VIII-A1

CURRENT PARTICIPATION IN CE AND PREFERENCE FOR CREDIT TOWARD CREDENTIAL FOR FUTURE CE ACTIVITY (Q13), BY TIME AND DISTANCE "COSTS" CE RESPONDENT IS WILLING TO "PAY" FOR THAT ACTIVITY

	Currently Participating in CE			Not Currently Participating in CE			
	Credit for Future CE Activity			Credit for Future CE Activity			All Desiring Future CE Activity
Hours per week (Q14)	Yes	No	All	Yes	No	All	
Less than 5	8%	16%	10%	13%	22%	16%	16%
5 - 9	36	46	39	34	41	37	37
10 - 19	31	12	26	28	23	26	26
20 - 29	10	9	10	14	9	12	12
30 or more	12	14	13	9	3	7	8
Don't know	2	2	2	2	3	2	2
Total	100%	100%	100%	100%	100%	100%	100%
(N)	(86)	(33)	(119)	(409)	(231)	(640)	(772)
Miles one way (Q11)							
0 - 4	4%	12%	6%	6%	12%	8%	8%
5 - 9	5	7	6	8	11	9	9
10 - 19	15	34	20	25	20	23	23
20 - 29	23	11	19	21	29	24	24
30 - 49	16	11	15	17	14	16	16
50 or more	37	25	34	23	14	20	21
Total	100%	100%	100%	100%	100%	100%	100%
(N)	(88)	(32)	(119)	(397)	(226)	(623)	(754)

The top-half of Table VIII-A1 describes several interesting relationships between CE demand variables and time bids. Those desiring and currently participating in CE are apparently willing to devote slightly more time to future CE activity than are those desirous of CE but not currently participating.[5] For example, only 10% of those currently participating were unwilling to commit at least five hours per week to future CE, while 23% said they could put in 20 hours or more. The parallel figures for those desirous but not currently

participating are 16% and 19%. Those wanting CE for credit are willing to invest more hours in CE than are those not looking for credit, although the difference is statistically significant only among those not currently involved in any CE activity. Indeed, "credit seekers" among those not currently participating are willing to spend just about as much time at CE as are the credit seekers who are currently involved, and the former outnumber the latter by nearly five to one. Presumably, then, the relatively large number of people in the former group must be unwilling to pay the other costs of CE, travel distance and/or money, perhaps because the opportunity costs of such payment would be prohibitive.

Travel distance. The data on the number of miles potential CE participants said they would be able to travel again suggest that a relatively high proportion of the potential demand for CE is "serious" about CE. Six of every ten (61%) potential participants said they'd be willing to travel at least 20 miles each way each week for a CE opportunity to their liking, and only 8% said they couldn't go as far as five miles (see the lower right-hand column of Table VIII-A1). Current participation (and the factors that cause such participation) and the credential-seeking goal seem to make Maine citizens willing to travel more for CE, although the latter appears to be the more important factor.[6] Thus, current participators desiring CE for credit bid more travel time than do the credit seekers not currently participating; the latter offer slightly higher travel distance bids than do current participants not seeking credit for future CE activity; this latter group, however, offers to travel only about the same distance for CE activity as do those also disdaining credit but who are not currently participating.

In contrast with our confident statement that scores of thousands of Mainers not currently participating are willing to meet the CE asking price in hours, we cannot here be certain that the substantial majority of potential

participants can meet the CE asking price in travel time. For, while we are quite confident that 10 to 20 hours per week is an adequate time bid for most CE offerings, we do not know that 25 miles one way will meet the travel distance asking price in the majority of cases. The CE Survey data do not provide the objective distance from respondents to the nearest locations at which "their kind" of CE is currently offered. The geographical location of the current supply of CE services and facilities is a crucial dimension of the Maine market for continuing education. However, it is a dimension that the CE Survey was not asked to explore.

Money. Unfortunately, we do not have Survey data on the cash value placed on their potential CE activity by those not seeking credit for their activity. Thus, we can't compare the cash bids of those seeking credit with bids from those who don't want credit, and, in consequence, we can't estimate the value that potential participants place on the for-credit feature of some CE offerings.

However, we are able to estimate what the credit-seekers (65% of all potential participants) would pay for the equivalent of a semester-long three-credit CE offering. The frequency distribution of their bids is displayed in the upper-right column of Table VIII-A2. The distribution is quite even across the categories: roughly one in seven said they'd be unable to pay anything, slightly more than a seventh offered $30, a seventh bid $60, a somewhat larger proportion--one-fifth--said they would pay $90, a seventh bid $120, and a seventh said they could afford at least $150.[7] Nearly one in ten didn't know what they'd be able to pay. Those who were currently participating on the average bid significantly more than those who were not.[8] However, in both groups, the modal bid was $90, but those currently involved in CE were even more likely to offer that amount than were those not involved. This feature of the money bid data is interesting: $90 is the price currently being asked by some of the

TABLE VIII-A2

CURRENT PARTICIPATION IN CE BY MONEY COSTS WILLING TO PAY AND PERCEIVED NEED FOR FINANCIAL AID FOR FUTURE CE ACTIVITY (AMONG THOSE WHO WANT CREDIT TOWARD A CREDENTIAL FOR THAT ACTIVITY)

	Currently Participating in CE?		All Desiring Future CE Activity (for Credit)
$ per semester (Q13D)	Yes	No	
Unable to pay	7%	15%	14%
$30	10	17	16
$60	14	14	14
$90	28	19	20
$120	17	13	13
$150 or more	15	13	14
Don't know	8	10	9
Total	100%	100%	100%
(N)	(88)	(414)	(501)
Need financial aid (Q13C)			
Yes	56%	56%	56%
No	37	35	35
Don't know	7	9	9
Totals	100%	100%	100%
(N)	(88)	(415)	(503)

major public providers of CE work for a semester-long, three-credit offering, the same type of CE "package" on which the CE Survey respondents were asked to bid. It is tempting to interpret the money bid data for those not currently participating as suggesting that a disproportionate number of potential CE customers view $90 as the intrinsic dollar value of the three-credit unit of CE (without knowing the $90 is a very common asking price), and that some of the major CE providers have a very good feel for what the market will bear. And it is equally tempting to interpret the rest of the data as suggesting that payment of the $90 asking price has led a disproportionate number of current participants to value a future three-credit unit at its current common asking price.

Notice, however, that a substantial minority of current participators (31%), nearly one-half (46%) of those not now participating, and 44% of all desiring CE in the near future indicated an inability to pay as much as the $90 going rate. This finding indicates that in the absence of a less expensive alternative, a decline in asking price, or the availability of direct cash subsidies, a substantial segment of the potential demand for credit-associated CE activities will not be met in the near term.

Indeed, the demand for subsidies, for "financial assistance," was directly measured in the CE Survey. Table VIII-A2 shows that the demand is quite widespread: over one-half (56%) of all respondents desiring CE, whether or not they are currently participating in CE, indicated a "need" for financial aid. As one might predict, the relationship between respondents' statement of a need for financial assistance in pursuing CE and the amount they said they would be able to pay is statistically significant and strongly negative:[9] Those predicting that they wouldn't need assistance were generally willing to pay more for a three-credit activity than were those predicting that they would (see Table VIII-A3). This is not to say, however, that none of those wanting financial assistance for a "course" of CE activity were able and willing to pay anything for it. For, as Table VIII-A3 indicates, one in every five indicating a need for financial aid said they'd pay $120 or more for an activity providing three credits toward a credential. And at least a few (6%) of those who felt they could pursue their desired CE activity without a financial subsidy indicated an inability (or an unwillingness) to pay even so much as $30 for a three-credit activity.

But, returning to Table VIII-A2, we must emphasize that a substantial minority of all those seeking CE for credit apparently would pay significantly more for a three-credit unit than the dominant public-sector CE providers' asking price for such a unit. More than one in four credit-seekers--27%, an estimated 53,000 people state-wide--said they would be able to pay at least

TABLE VIII-A3

PERCEIVED NEED FOR FINANCIAL ASSISTANCE (FOR PURSUIT OF COURSE OF CE STUDY LEADING TO CREDENTIAL) BY HIGHEST MONEY COST RESPONDENT WILLING TO PAY (FOR CE ACTIVITY PROVIDING THREE CREDITS)

	Need Financial Assistance (Q13C)			
Highest amount R able to pay (Q13D)	Yes	No	Don't Know	Q13D Totals
Unable to pay anything	19%	6%	4%	14%
$30	19	11	22	16
$60	17	10	9	14
$90	20	22	11	20
$120	13	15	11	13
$150 or more	7	23	21	14
Don't know	5	13	22	9
	100%	100%	100%	100%
Q13C Totals	56%	35%	9%	100%
(N)	(283)	(174)	(44)	(501)

$120; and 14%--14,000 projected enrollees--reported a willingness to pay at least $150 for an appropriate three-credit unit. Since total current participation in all kinds of CE is only an estimated 65,000, a huge unfilled demand would appear to exist at money bid prices above some market prices. How might we explain this apparent market imperfection?

Such an apparent imperfection in the market for a three-credit CE unit might be explained by any one or more of a number of possible explanations:

(1) Many of those offering bids of cash that are above the cash asking prices can't meet the time and/or the travel distance costs of CE participation;

(2) even at the prices they are offering, there is a shortage of the particular kinds of credit courses desired by the high-cash bidders;

(3) the high-bidding customers lack information about the supply of their desired courses, or its location, or that the asking price for the supply is at or below prices they bid; and/or

(4) many of the bids offered by CE Survey respondents (i.e., many of the answers to Question 13d) weren't "serious."

Unfortunately, this report can cast light only on the first of these possible explanations for the apparent existence of considerable CE demand at money bid prices in excess of the predominant asking prices. We now turn to a topic relevant to that first explanation to an examination of the inter-relationships among the three dimensions of CE participation costs.

Interrelationships Among the CE Bid-price Dimensions

We have estimated that nearly 140,000 Maine adults want to participate in continuing education and feel they can spend at least ten hours per week on CE activity. That would seem a sufficiently high 'time bid' to meet the 'asking price' (in time) of most CE offerings.

Almost 180,000 adults in Maine desire CE and say they would be able to travel at least 20 miles each way each week in order to participate in CE. We do not know, of course, the distance from each citizen (or even from each CE Survey respondent) to the closest location at which he could obtain his desired CE activity. However, 20 miles is a considerable distance and should meet most travel distance costs.

A projected 93,000 Maine adults who wish to participate in CE for credit toward a credential are apparently willing to pay at least $90 for a semester-long, three-credit CE unit. A $90 'money bid', while lower than some CE asking prices, is about what is charged by many public sector providers of such CE units.

Nonetheless, only about 65,000 adult citizens of Maine are estimated currently to be participating in a continuing education activity of any kind, at any cost. How might we explain this seeming 'market failure', this apparent inability of the CE market to absorb the demand represented by those scores of thousands of apparently serious and adequate bids for continuing education?

We have already suggested the possibility that this seeming market failure is more apparent than real. One reason for the possible illusion is that our estimate of effective demand for CE may be too high. Many people desirous of CE participation who are willing to match and even exceed the going CE asking prices on one cost dimension are unwilling to meet the asking prices on one or both of the other cost dimensions. Indeed, in supporting our separation of the time, travel distance, and money dimensions we argued, albeit only by illustration, that the three cost dimensions are not necessarily the same empirically, that the cost of distance travelled, especially by private automobile, is not necessarily considered by those who do the traveling as the sum of its real dollar and time costs; and that time spent is not necessarily money spent.

The CE Survey data on the time and travel bids of all desiring CE, and the time, distance, and money bids of those desiring CE for credit, permit us statistically to test the hypothesized independence of the three CE cost dimensions and, hence, to test one explanation of the apparent failure of the CE market.

The time, travel distance, and money prices respondents reported being willing to pay to engage in CE are not statistically independent of one another. Whether among all desirous of CE or just those wanting CE for credit, the greater the time commitment made to CE the greater the number of miles Survey respondents said they were willing to travel for CE. And among those requesting credit, the higher the time or the travel bids, the larger the sum of money they said they would pay for CE.

These relationships are all statistically significant. But they are not very strong.[10] Apparently many of those offering adequate dollar or even travel distance bids for CE were "unable to spare the time"; and it would appear that at least a significant portion of those willing to travel some distance for CE were unwilling to pay much cash for it.[11] To the extent that this is the case, we do not have to fall back on 'market failure' as an explanation for the

discrepancies between the number of citizens desiring CE and the number participating in it. We can rely instead on a very straight-forward explanation: In the eyes of many Maine adults, CE isn't worth as much as it costs when time and travel and money costs are considered. Many of those who say they'll pay at least $90 will not bid both 20 or more miles and ten or more hours; many of those offering ten or more hours can't afford the $90.

But to what extent does the independence of the cost dimensions explain the huge gap between the potential near-term demand for CE--the roughly 300,000 Maine citizens who said they'd like to take part, and the actual current demand--the estimated 65,000 currently participating in CE? How do each of the three cost dimensions interact to reduce participation? How much might demand increase (or decrease) if the asking price on one or more cost dimensions was significantly decreased (or increased)?

The Joint Impact of Time and Travel Costs on CE Demand

Table VIII-A4 is a much simplified version of a three-dimensional 'demand table'. It reports the estimated proportion of all Survey respondents (desiring CE) who said they would spend at least a given amount of time and would travel at least a specified distance in order to obtain the CE activity of their choice. Most importantly for our initial purposes here, Table VIII-A4 may help describe how and how much the independence of the CE cost dimensions operates to reduce the number who can afford all of the CE costs.

Of the nearly 300,000 Mainers desiring CE, an estimated 178,700 are willing to travel at least 20 miles each way each week for CE, roughly 137,500 say they would devote ten or more hours per week to CE, but only 91,900 (31.0%) are apparently willing to do both. Among those desiring CE for credit, 35.3% said they'd 'pay' both minimums. Among those desiring and currently participating in CE, the figure is 39.1%--a rate nearly one-third again as high as the rate for all desiring CE.

TABLE VIII-A4

THE DEMAND FOR CE: THE PROPORTION OF RESPONDENTS (DESIRING CE) WHO SAID THEY WOULD TRAVEL AT LEAST THE INDICATED DISTANCE AND DEVOTE AT LEAST THE INDICATED AMOUNT OF TIME FOR CE LEARNING ACTIVITY

The top-left figure in each group of four is the cumulative percentage of all respondents (desiring CE) who said they would bear at least the indicated "costs" (n = 736); the bottom-left figure is that percentage projected to the adult population of Maine--and expressed in thousands*; the top-right figure is the cumulative percentage of respondents desiring CE for credit toward a credential who said they would bear at least the indicated "costs" (n = 440); the bottom-right figure is the cumulative percentage of respondents desiring CE and currently participating in CE who said they would bear at least the indicated "costs" (n = 117).

	Distance Would Travel (Each Way Each Week--Q11):									
Time Would Devote (Q14)	0 or More Miles		10 or More Miles		20 or More Miles		30 or More Miles		50 or More Miles	
20 or More Hours/Week	19.6%	22.0%	18.4%	20.6%	13.8%	15.2%	10.1%	11.4%	6.7%	6.2%
	58.1	21.7%	54.5	21.0%	40.9	18.1%	29.9	14.3%	19.9	9.6%
10 or More Hours/Week	46.4%	52.1%	41.5%	46.3%	31.0%	35.3%	21.9%	26.1%	13.1%	14.8%
	137.5	49.6%	123.0	45.0%	91.9	39.1%	64.9	31.3%	38.8	18.7%
5 or More Hours/Week	84.3%	87.5%	72.6%	77.9%	53.5%	58.9%	33.4%	38.2%	19.7%	23.4%
	249.9	89.3%	215.2	79.5%	158.6	63.2%	99.0	46.0%	58.4	29.4%
0 or More Hours/Week	100.0%	100.0%	83.5%	87.1%	60.3%	63.9%	36.9%	41.1%	21.3%	24.9%
	296.4	100.0%	247.5	87.9%	178.7	68.9%	109.4	49.5%	63.1	32.7%

*The projection is based on the total number of respondents expressing a desire for CE who could name the subject matter they most wanted to study (n = 756). (The difference between the two sample sizes, 756 and 736, is due to the few respondents who "didn't know" how many miles they would travel and/or how much time they would be willing to devote to CE. In making out projections, we have assumed that these few should be distributed across the distance and time variables in the same proportions as those who did provide answers to both of those questions.)

Because Table VIII-A4 includes data on all respondents desiring CE, it must of necessity ignore the monetary price dimension. Nonetheless, examination of the Table may be a useful way of estimating the interaction of time and travel distance costs on demand for CE under circumstances in which CE was offered at no direct dollar cost to its participants. (The State might tax all citizens to pay for the "free" CE, providing the service through its own employees or through private contractors--perhaps in conjunction with a CE voucher system.) The Table suggests that, in such an event, the demand for CE would be much more sensitive to marginal unit decreases (or increases) in the asking price in time than to unit changes in the number of miles to be traveled.

Further, the same Table suggests what might happen to demand if CE were free of both monetary and travel distance costs (a circumstance which, because of possible breakthroughs in communications technology, is not entirely foolish to contemplate). If the CE asking price in time was at least ten hours (the "reasonable" standard we've been employing), the demand for travel cost-free and monetary cost-free CE would be in excess of 137,000 state-wide (50% higher than the 91,900 estimated for "no-charge" CE with a ten-hour and a 20-mile asking price--and twice the current actual demand). But if CE were costless with respect to travel, there would be no time demands of travel. With zero dollar and zero travel costs, and a time cost of, for example, only five hours per week, projected CE demand would leap to one-fourth of a million participants, or roughly five-sixths of all those desiring CE. However, only if CE were totally free of any time, travel distance, and money costs would all 300,000 desiring CE actually participate in it.

The Joint Impact of Time Costs, Travel Costs, and Money Costs on CE Demand

Because of the limitations of the CE Survey data, in order to consider the role of money costs as an additional constraint on effective demand for CE, focus must

shift from the set of all respondents desiring CE to the roughly 65% who wanted CE for credit toward some sort of credential.

Table VIII-A5, a simplified four-dimensional demand table, reports the proportion (and the absolute number, projected state-wide) of CE credit seekers who would presumably buy their preferred CE activity at each of 150 different sets of asking prices, i.e., at all possible combinations of four different minimum time prices, five travel-distance prices, and six money prices.

The demand-constraining role of each cost dimension may be appreciated with reference to that table. From that Table we learn that among all Maine adults, an estimated:

194,800 desired continuing education for credit; of these:
124,500 said they'd travel at least 20 miles each way each week for CE;
104,900 were able to pay at least $90 for a three-credit unit;
101,500 indicated they'd devote at least ten hours per week to their CE;
78,400 bid at least 20 miles and at least $90;
68,800 bid at least 20 miles and at least 10 hours;
61,900 bid at least 10 hours and at least $90; and only
46,200 bid at least 10 hours, at least 20 miles, and at least $90.

As can be seen, the estimated 46,200 desiring CE for credit and willing to pay the indicated amounts of time, travel distance, and money constitute fewer than one-fourth (24%) of all those desiring CE for credit. This figure compares with an estimated 34,500 people desirous of CE credit and currently participating in CE--whether for credit or not. We do not wish to imply that all of the 34,500 are included in the 46,200 bidding at or above the indicated levels on all three cost dimensions. Nor do we want to imply that 46,200 is the maximum meaningful potential demand for CE for credit. Afterall, a great deal of CE is available at less than the ten-hour, 20-mile, $90 set of asking prices used throughout our analysis as a "reasonable" illustration. Thus, some citizens already participating in CE for credit are doing so at costs below, sometimes considerably below, the illustrative costs. However, it has been shown that the higher the bids offered by the individual, the more likely he or she is to be currently participating in CE (see Tables VIII-A1 and VIII-A4).

TABLE VIII-A5

THE DEMAND FOR CE: THE PROPORTION OF RESPONDENTS (DESIRING CE FOR CREDIT) WHO SAID THEY WOULD PAY AT LEAST THE INDICATED AMOUNT (FOR A THREE-CREDIT ACTIVITY), TRAVEL AT LEAST THE INDICATED DISTANCE (EACH WAY ONCE A WEEK), AND DEVOTE AT LEAST THE INDICATED AMOUNT OF TIME (EACH WEEK), FOR CE LEARNING ACTIVITY

The top figure in each cell is the cumulative % of all respondents (desiring CE for credit) who said they would bear at least the indicated "costs"; the bottom figure is the sample estimate projected to all adults in Maine--in thousands.

Able to "Pay" at Least $150 and:

Will Travel → / Devote ↓	0 or + Mi.	10 or + Mi.	20 or + Mi.	30 or + Mi.	50 or + Mi.
20 or + Hrs	5.0%	5.0%	3.5%	2.6%	.9%
	9.8	9.8	6.8	5.1	1.8
10 or + Hrs	9.3%	9.3%	7.6%	5.4%	3.0%
	18.0	18.0	14.7	10.6	5.8
5 or + Hrs	14.8%	14.5%	12.5%	7.9%	3.9%
	28.9	28.2	24.3	15.4	7.6
0 or + Hrs	15.7%	15.0%	13.0%	8.4%	4.0%
	30.5	29.2	25.3	16.4	7.8

Able to "Pay" at Least $120 and:

Will Travel → / Devote ↓	0 or + Mi.	10 or + Mi.	20 or + Mi.	30 or + Mi.	50 or + Mi.
20 or + Hrs	8.6%	8.2%	6.6%	5.2%	2.7%
	16.8	16.0	12.8	10.0	5.4
10 or + Hrs	18.8%	18.4%	15.2%	11.2%	7.2%
	36.6	35.8	29.7	21.7	14.0
5 or + Hrs	28.9%	27.9%	24.1%	16.3%	9.7%
	56.3	54.4	47.0	31.7	19.0
0 or + Hrs	30.9%	29.7%	25.2%	17.3%	10.1%
	60.3	57.8	49.0	33.7	19.7

Able to "Pay" at Least $90 and:

Will Travel → / Devote ↓	0 or + Mi.	10 or + Mi.	20 or + Mi.	30 or + Mi.	50 or + Mi.
20 or + Hrs.	11.9%	11.2%	8.7%	6.1%	3.7%
	23.2	21.8	16.9	11.8	7.1
10 or + Hrs	31.8%	29.1%	23.7%	16.9%	9.7%
	61.9	56.6	46.2	32.9	19.0
5 or + Hrs	49.4%	45.6%	37.7%	24.7%	14.9%
	96.2	88.8	73.4	48.0	29.1
0 or + Hrs	53.8%	49.3%	40.2%	26.5%	16.2%
	104.9	96.1	78.4	51.7	31.5

Able to "Pay" at Least $60 and:

Will Travel → / Devote ↓	0 or + Mi.	10 or + Mi.	20 or + Mi.	30 or + Mi.	50 or + Mi.
20 or + Hrs	14.5%	13.7%	10.1%	7.5%	4.6%
	28.2	26.8	19.7	14.6	9.0
10 or + Hrs	37.5%	34.6%	27.3%	20.0%	12.0%
	73.0	67.4	53.2	39.0	23.4
5 or + Hrs	62.4%	57.8%	46.2%	29.6%	18.4%
	121.5	112.6	90.0	57.7	35.8
0 or + Hrs	69.1%	63.7%	49.6%	31.8%	19.9%
	134.4	124.2	96.7	61.9	38.8

Able to "Pay" at Least $30 and:

Will Travel → / Devote ↓	0 or + Mi.	10 or + Mi.	20 or + Mi.	30 or + Mi.	50 or + Mi.
20 or + Hrs	18.0%	17.1%	12.5%	9.2%	5.6%
	35.1	33.3	24.4	18.0	11.0
10 or + Hrs	45.1%	41.3%	32.1%	23.4%	14.2%
	87.8	80.4	62.6	45.7	27.6
5 or + Hrs	76.0%	69.5%	54.5%	35.5%	22.7%
	148.1	135.5	106.2	69.2	44.3
0 or + Hrs	86.2%	77.6%	58.6%	37.9%	24.3%
	167.8	151.2	114.2	73.8	47.3

Able to "Pay" at Least $0 and:

Will Travel → / Devote ↓	0 or + Mi.	10 or + Mi.	20 or + Mi.	30 or + Mi.	50 or + Mi.
20 or + Hrs	22.0%	20.6%	15.2%	11.4%	6.2%
	43.0	40.1	29.6	22.2	12.1
10 or + Hrs	52.1%	46.3%	35.3%	26.1%	14.8%
	101.5	90.2	68.8	50.8	28.8
5 or + Hrs	87.5%	77.9%	58.9%	38.2%	23.4%
	170.5	151.7	114.7	74.4	45.5
0 or + Hrs	100.0%	87.1%	63.9%	41.1%	24.9%
	194.8	169.6	124.5	80.1	48.5

The conclusions we wish to reach are these. First, and obviously, there are two major but not necessarily incompatible strategies for increasing the actual demand for CE. Lower CE asking prices or obtain higher bid prices.

CE providers may be in a position selectively to lower their prices without noticeably increasing their costs. Changes in the set of locations at which they provide certain offerings (particularly if the charges are more than marginal), and the development of less time-demanding types of offerings are two obvious tactics. But as we noted in Section IV, there are numerous socio-economic trends whose effects will be to increase demand for CE in the decades ahead. Some of these, such as possible increases in leisure time, will have the effect of lowering the opportunity costs to potential CE participants of fixed asking prices. Even the rising costs of energy, while seeming to increase the opportunity-cost translation of a given distance asking price, may in the long haul reduce the opportunity cost of CE by causing higher density housing and hence reduced CE travel costs, and by making alternative and more travel-intensive forms of leisure activity relatively less attractive than CE.

Thus, CE providers may increase effective demand for CE by lowering their asking prices, but they should be aware of the more massive (if longer term) forces that may serve to decrease the opportunity costs to participants of existing asking prices.

Effective demand will also increase when potential participants' bids become higher. Bids will rise either because of a shortage of a given service (in which case the proportion of demand that is satisfied will decline), or because the value of the available CE service is increased. Thus, by heightening their sensitivity to changes in the nature of the potential CE demand in all its dimensions, CE providers will be in a better position to raise the value of their services to existing and potential CE participators. These are quite obvious conclusions.

Less obvious is the possibility of using data such as that arrayed in Table VIII-A5 (and in the condensed, regional versions of it which appear in the regional reports) to help estimate the likely demand consequences of particular changes in asking or bid prices with respect to any one of the cost dimensions. We have already illustrated this possibility with respect to Table VIII-A4. But Table VIII-A5 adds an additional cost dimension--money. Money prices of CE are on the whole much more easily and quickly manipulated by CE providers than are distance and time prices. Let us illustrate the kinds of insights that may be provided by multi-dimensional demand tables.

Providers may wish to be able crudely to forecast what will happen to potential demand if CE asking prices in money are increased or decreased. Table VIII-A5 suggests, for example, that potential demand for credit courses that require at least ten hours per week of involvement and a 20-mile one-way commute will rise only very slightly (from an estimated 46,200 to 53,200) if the fee for the course is decreased from $90 to $60. However, the potential demand will decline substantially (from 46,200 to 29,700--a 36% cut) if the asking price of the previously described offering is raised to $120.

Some understanding may also be had from Table VIII-A5 of the likely payoff of a reduction in travel-distance asking price, as for example that which may occur if CE services are provided at a new location. Potential demand appears essentially insensitive to reductions in travel distance prices below 10 miles one-way, and not very sensitive to reductions below the 20 mile minimum. That is, generally speaking, moving a location of CE from a few miles distant to figuratively next door will not generally increase demand significantly. (It may, however, effect demand of particular groups substantially.) However, demand is much more sensitive to decreases in travel distance below the 20-mile figure as one moves from the higher toward the lower dollar asking-prices.

The data we have explored suggest that the elasticity of demand for CE is more dependent upon time prices than travel or dollar prices (at least within the plausible ranges used here). And demand is quite insensitive to reduction in time prices below the five hour per week minimum, except at low or zero distance and dollar levels (where it is only mildly sensitive).

However, demand is very sensitive to increases or decreases in time prices above the five hour level.

Thus far our analysis of CE prices has assumed that the only distinction among CE services is that between credit and not-for-credit courses, i.e., that the prices bid are for relatively homogeneous CE units. Having devoted the previous three sections of this report to a description and analysis of the tremendous diversity of the CE opportunities, services, and arrangements sought, we now turn to an analysis of the relationships between the costs potential participants say they are prepared to bear in continuing their education and the types of subjects and locations they prefer for that education.

Variations in Bid Prices

In examining relationships between the time, travel distance, and money prices potential CE participants said they'd pay and their most preferred CE subjects and locations, we should bear in mind the way in which each of these variables was measured in the CE Survey.

Ideally, respondents should probably have been asked, in effect, "Where would you most prefer to study (respondent's most preferred subject)?" and "What is the maximum amount of time, of travel distance, and of money you would devote to a four-month-long course on (respondent's most preferred subject)?"[12] But that is not how the questions were asked (see Appendix A, Questions 8, 9, 11, 13d, and 14). The time and distance price measures reflect, in effect, maximum

bids for "learning activities." The money price measure is a maximum bid for a four-month-long, three credit unit, but the subject as well as the location is unspecified. The measure of locational preference refers to the place the respondent considered "most appropriate" to his "learning needs" but includes no reference to his most preferred subject. Thus, each of the preference and bid price variables was measured independently of all the others. For these and other reasons, we should not necessarily anticipate strong statistical associations between bid prices and subject preferences or between bid prices and locational preferences.

Bid Prices and CE Subjects in Demand

The intensity of a citizen's demand for CE, as measured by his willingness to pay for CE in one or more scarce resources, varies somewhat with the subject matter of greatest interest to the potential participant in continuing education. Tables VIII-B1, VIII-B2 both tell very much the same story: These are statistically significant but only modest relationships between the costs potential participants say they are willing to bear and the subject they most prefer to pursue.[13]

Whether dealing with all respondents desiring CE (Table VIII-B1) or with only those desiring CE for credit (Table VIII-B2), there is a similar distribution of CE price bids among those preferring CE work in the categories of business, social sciences and humanities, and the two major vocational categories (essentially the building trades and auto mechanics), with those distributions very much the same as those constructed for the total populations.

However, several subject matter groupings are at variance from the rest. Potential participators in the arts and crafts, particularly those not seeking CE for credit (i.e., those who are represented in Table VIII-B1 but not in VIII-B2), tend to commit fewer hours to CE and to offer to travel fewer miles for it. The latter tendency carries over to those seeking credit for their arts or crafts work.

Other subject groupings offering lower than average bids for CE include health, which is lower than the rest only with respect to the money bids; vocational services, with lower than average travel distances (both tables); and general education, with below-average bids in terms of time, travel distance, and money (yet at the same time less likely to request financial aid). Of course, the number of cases available for analysis in each of these last categories, as well as the numbers in the apparently "deviant" recreational and law and law enforcement subject groupings, renders confident generalization inadvisable.

Potential participants in two of the subject groupings would appear to differ from the rest in that they seem willing to bear greater than average burdens to obtain CE than do others. Those most desiring work in the sciences-mathematics-engineering category appear to be willing to travel significantly farther than others, a finding that might be the result of numerous factors, one of them the generally higher average travel costs of science courses. That is, with a scarcity of facilities for such courses, the average potential participant would have to offer to go a larger number of miles to use them.

However, the most distinctive subject grouping in the two tables is composed of those most desiring CE in education. They typically bid more in terms of time, travel distance, and money than do those in other major categories. One could plausibly assume that many respondents most desiring CE in education were teachers seeking CE in order to meet the certification requirements for maintaining their jobs or to obtain advance degrees in order to win promotions. That motivational basis of participation, plus the fact that the courses meeting some of their needs are available only at one or a few institutions in the state, leads those seeking CE work in education to evidence a willingness to incur substantial CE costs of all three types.

TABLE VIII-B1

"MOST DESIRED" TOPIC OF CE ACTIVITY BY TIME AND DISTANCE "COSTS" RESPONDENT WOULD BEAR

	Among All Desiring CE	Business	Arts and Crafts	Soc. Sci. and Humanities	Sciences, Math, etc.	Voc'l: Crafts and Mach. Oper.	Health	Education	Voc'l: Auto and Eng. Mech.	Voc'l: Services and Other	General Education	Recreation	Law, Law Enforcement	Bible Studies and Religion	Other
Hours per week (Q14)															
Less than 5	16%	9%	22%	13%	21%	18%	19%	12%	16%	10%	31%	9%	0%	40%	14%
5 - 9	36	37	43	49	22	35	26	28	35	45	23	59	13	24	31
10 - 19	26	34	18	21	32	27	32	17	24	25	14	16	66	10	32
20 - 29	12	11	11	12	14	8	12	32	14	0	22	7	0	10	8
30 or more	8	10	6	5	2	6	9	10	11	20	10	9	21	17	11
Don't know	2	0	*	1	9	5	2	0	0	0	0	0	0	0	4
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(747)	(140)	(134)	(111)	(66)	(64)	(59)	(39)	(25)	(20)	(14)	(12)	(11)	(8)	(44)
Miles one way (Q11)															
0 - 4	8%	8%	11%	9%	0%	3%	9%	*%	16%	0%	4%	11%	0%	0%	16%
5 - 9	9	5	13	19	6	5	6	6	0	29	10	0	0	0	2
10 - 19	23	28	27	18	17	20	21	13	22	24	60	14	7	43	17
20 - 29	24	31	22	18	30	32	23	14	15	20	6	27	25	19	17
30 - 49	16	16	11	13	19	10	23	21	28	19	10	17	55	0	15
50 or more	21	12	16	23	28	30	20	47	19	7	10	30	13	38	34
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(731)	(138)	(130)	(106)	(64)	(64)	(59)	(39)	(24)	(20)	(14)	(12)	(11)	(8)	(42)

* Less than 0.5%

TABLE VIII-B2

"MOST DESIRED" TOPIC OF CE ACTIVITY BY TIME, DISTANCE, AND MONEY "COSTS" RESPONDENT WOULD BEAR, AND PERCEIVED NEED FOR FINANCIAL AID (AMONG THOSE DESIRING A CREDENTIAL FOR CE)

	Among All Desiring CE & a Credential	Business	Arts and Crafts	Soc. Science & Humanities	Science, Math, etc.	Voc'l Crafts & Mach. Oper.	Health	Education	Voc'l: Auto & Eng. Mech.	Voc'l: Services & Other	General Education	Recreation	Law, Law Enforcement	Bible Studies & Religion	Other
Hours per week (Q14)															
Less than 5	13%	6%	13%	13%	18%	20%	19%	11%	11%	8%	42%	13%	0%	22%	6%
5-9	34	39	41	40	25	26	21	26	28	49	31	61	13	31	38
10-19	29	32	15	25	38	43	33	19	33	21	6	11	66	13	31
20-29	13	11	19	14	9	9	14	37	12	0	8	11	0	13	6
30 or more	10	12	10	6	2	3	10	7	17	23	14	5	21	22	19
Don't know	1	0	1	2	7	0	3	0	0	0	0	0	0	0	0
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(489)	(101)	(57)	(69)	(49)	(35)	(50)	(34)	(16)	(18)	(10)	(7)	(11)	(6)	(25)
Miles one way (Q11)															
0-4	5%	7%	11%	2%	0%	0%	7%	1%	19%	0%	6%	0%	0%	0%	10%
5-9	8	6	9	17	5	6	4	4	0	29	14	0	0	0	3
10-19	23	27	24	17	17	33	25	12	21	27	67	11	7	47	15
20-29	22	28	30	22	27	17	20	15	14	20	0	37	25	3	13
30-49	17	18	10	11	22	10	24	21	18	16	13	2	55	0	15
50 or more	25	14	15	30	28	33	20	48	28	8	0	50	13	50	44
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(479)	(100)	(54)	(65)	(48)	(35)	(48)	(36)	(16)	(18)	(10)	(7)	(11)	(6)	(25)
$ per semester (Q13D)															
Unable to pay	13%	20%	23%	8%	3%	11%	18%	5%	6%	25%	19%	0%	13%	0%	10%
$30	16	13	13	13	14	17	24	8	27	4	67	48	0	31	15
$60	14	16	14	13	12	15	16	7	12	10	0	26	20	13	16
$90	20	21	22	21	24	17	16	34	24	22	0	0	18	13	12
$120	13	12	10	19	24	9	13	16	0	3	8	0	16	22	11
$150 or more	14	12	16	16	6	16	9	15	24	16	0	26	34	0	22
Don't know	9	5	1	9	17	14	4	15	7	20	6	0	0	22	14
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(484)	(97)	(55)	(70)	(49)	(35)	(48)	(36)	(16)	(18)	(10)	(7)	(11)	(6)	(25)
Need financial aid (Q13C)															
Yes	56%	63%	60%	54%	51%	56%	61%	47%	56%	65%	25%	52%	82%	53%	32%
No	35	35	34	33	31	29	32	51	39	27	62	48	18	47	43
Don't know	9	2	6	13	18	14	8	2	5	8	14	0	0	0	25
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(485)	(97)	(55)	(70)	(49)	(35)	(50)	(36)	(16)	(18)	(10)	(7)	(11)	(6)	(25)

Despite the distinctiveness of the education subject grouping, the data in Tables VIII-B1 and -B2 cause us to conclude that most of the variation between potential participants' bid prices is within rather than between the CE subject categories. Here as elsewhere we have been treating content-based aggregations of CE activities as if, within any one grouping, they were homogenous units. But as we have pointed out, all of the larger groupings, and most of the smaller ones, include a broad array of sometimes disparate offerings that are seldom, if ever, treated as a single CE unit, course, or activity. Thus, the data we have just described should probably not be utilized for such detailed planning tasks as the selection and pricing of specific CE courses. What is more, the prices potential participants claim to be willing to invest in CE--the travel distance and money costs, if not the time costs--may be at least as much a function of where the participant hopes or expects to obtain his CE activity. That is, a respondent's CE bid price is in part determined by asking prices. And distance and money asking prices may vary more by the type of location, even the specific institution, at which the potential participant would like to take part in CE than by the topic of his CE activity.

Bid Prices and CE Locations in Demand

The relationships between CE Survey respondents' time, distance, and money bids for CE and their most preferred CE locations are statistically significant and of the same magnitudes as those between bids and CE subject preferences (see Tables VIII-C1 and VIII-C2).[14] And the nature of some of the relationships certainly conforms to reasonable expectations.

Those most preferring to engage in CE at home or at a high school (a local high school, we would assume in almost every instance) offer significantly lower time, travel distance, and money bids for their CE activity than do those preferring other locations. Lower-than-average distance bids would certainly be

expected from the home and high school locational groupings. But why their time and dollar bids are also relatively low is not entirely clear. Choices of the home as CE site, and perhaps of the high school, were undoubtedly affected, in some instances even dictated, by the high opportunity cost of travel for the individuals involved. It may be that time and dollar constraints operated in the same fashion. Thus, one mode of explanation is to attribute the bid-locational relationships to the effects of individuals' resource constraints (distance--and perhaps time and money) on their choice of CE location. But the same statistical correlations between bid levels and locations could also occur if the causal order was reversed. Perhaps the home or the high school was chosen for reasons other than low cost site. But since those sites are generally relatively low in cost (have low asking prices) with respect to time, distance, and money, the respondents who selected those sites simply set their bid maximums at the low perceived asking price.

But whether cost constraints lead to locational choice, or locational choice led to lower-cost offers, those most preferring locations "closest to home" offered objective time, distance, and money bids that are significantly lower than the bids of potential participants preferring other locations. Note, however, that from a subjective--'opportunity cost'--standpoint those preferring the home or the high school as a CE site may be offering as much or more than others seeking CE.

The choice of a private college or university as the preferred location for CE is quite strongly associated with higher bid maximums on all three cost dimensions. For example, among those desiring credit for CE work at private institutions, 44% bid at least 20 hours per week, 73% offered to travel at least 30 miles each way per week, and 34% offered to pay at least $120 for a semester-long three-credit CE unit. The comparable figures for those most desiring a University of Maine campus are lower--24%, 50%, and 30%, and the figures for

TABLE VIII-C1

MOST APPROPRIATE LOCATION FOR CE ACTIVITY BY TIME AND DISTANCE "COSTS" RESPONDENT WOULD BEAR

	"Most Appropriate" Location for Learning Needs (Q9)											
	Among All Desiring CE	At Home	At Work	University of Maine	Private College or University	Community or Jr. College	Private Voc, Trade or Business School	Vocational Technical Institute	Regional Vocational Center	High School	Adult Learning Center	Other, inc. Community Agency, DK
Hours per week												
Less than 5	15%	21%	11%	9%	0%	20%	12%	22%	12%	27%	13%	14%
5 - 9	37	40	38	34	32	37	38	30	31	40	47	31
10 - 19	26	22	25	31	29	10	31	25	43	23	16	33
20 - 29	12	10	16	15	26	4	1	14	0	4	14	14
30 or more	8	6	8	9	10	16	18	9	5	6	4	5
Don't know	2	1	2	2	3	13	0	0	9	0	6	3
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(754)	(127)	(96)	(154)	(44)	(14)	(24)	(74)	(19)	(80)	(66)	(56)
Miles one way												
0 - 4	8%	17%	6%	1%	0%	8%	6%	1%	0%	13%	8%	16%
5 - 9	9	11	8	5	8	10	10	10	14	10	13	5
10 - 19	23	32	18	19	11	33	26	17	28	28	24	21
20 - 29	23	17	22	26	14	20	27	31	32	30	30	18
30 - 49	16	6	20	17	28	16	18	13	16	10	14	21
50 or more	22	16	25	32	39	13	13	28	9	8	11	18
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(739)	(122)	(89)	(153)	(46)	(14)	(24)	(75)	(19)	(76)	(66)	(56)

TABLE VIII-C2

MOST APPROPRIATE LOCATION FOR CE ACTIVITY BY TIME, DISTANCE, AND MONEY "COSTS" RESPONDENT WOULD BEAR, AND PERCEIVED NEED FOR FINANCIAL AID (AMONG THOSE DESIRING A CREDENTIAL FOR CE)

		"Most Appropriate" Location for Learning Needs (Q9)										
	Among All Desiring CE	At Home	At Work	University of Maine	Private College or University	Community or Jr. College	Private Voc, Trade, or Business School	Vocational Technical Institute	Regional Vocational Center	High School	Adult Learning Center	Other, inc. Community Agency, DK
Hours per week												
Less than 5	12%	17%	11%	9%	0%	11%	18%	20%	13%	21%	4%	8%
5 - 9	34	43	36	34	21	41	23	29	21	38	48	19
10 - 19	28	22	28	30	31	11	30	27	57	23	21	42
20 - 29	14	12	15	14	32	5	1	15	0	8	14	19
30 or more	10	6	8	10	12	18	27	9	9	9	11	12
Don't know	2	0	3	3	4	14	0	0	0	0	2	0
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(495)	(82)	(68)	(122)	(35)	(12)	(16)	(54)	(11)	(42)	(27)	(26)
Miles one way												
0 - 4	5%	14%	7%	1%	0%	9%	0%	0%	0%	8%	3%	12%
5 - 9	8	14	9	5	0	11	4	9	12	15	2	8
10 - 19	23	33	16	19	13	37	28	20	34	36	29	12
20 - 29	22	18	19	26	14	22	22	24	18	31	36	16
30 - 49	16	6	21	18	34	6	28	14	20	2	22	24
50 or more	25	16	29	32	39	14	19	34	16	9	9	28
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(486)	(76)	(66)	(122)	(37)	(12)	(15)	(54)	(11)	(40)	(27)	(25)
$ per semester												
Unable to pay	14%	24%	20%	2%	8%	11%	15%	10%	16%	26%	19%	8%
$30	16	15	17	14	8	0	14	15	18	24	29	15
$60	14	8	8	20	21	5	9	13	16	8	24	12
$90	20	14	16	27	16	37	14	18	13	23	18	19
$120	14	9	18	12	15	33	6	19	16	13	10	8
$150 or more	14	10	18	18	19	0	2	22	21	3	1	19
Don't know	9	20	3	7	13	14	39	4	0	3	0	19
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(492)	(81)	(66)	(122)	(37)	(12)	(15)	(53)	(11)	(42)	(27)	(26)
Need financial aid												
Yes	56%	58%	60%	58%	61%	63%	59%	46%	46%	35%	77%	56%
No	35	34	32	37	39	11	14	41	54	53	18	24
Don't know	9	8	8	5	0	25	27	13	0	12	6	20
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
(N)	(493)	(81)	(66)	(122)	(37)	(12)	(15)	(54)	(11)	(42)	(27)	(25)

all desirous of CE for credit (without regard to site preferences) are generally even lower--24%, 41%, and 28% (Table VIII-C2). Indeed, those most preferring public university system locations offered time bids that were not significantly higher, and distance and dollar bids at best marginally higher, than those offered by all potential CE participants. The differences in the bid levels of those preferring private colleges, those wanting UM campus sites, and all other participants might be interpreted in a variety of ways. But a solid understanding of the reasons for the differences would require rather more time for analysis, and perhaps more data, than is available for that purpose at this time.

Several other bid price-locational preference relationships at least border on statistical significance. Among all desiring CE, those preferring the Vocational Technical Institutes (VTIs) offered above-average distance bids and those looking to a community or junior college site below-average distance bids (see Table VIII-C1). Among those desiring CE for credit (Table VIII-C2), those in the community agency-residual category offered an above-average amount of time, and those preferring an adult learning center bid lower than average amounts of money. Interestingly, those most preferring the high school location and those choosing the adult learning center included similarly high proportions indicating an inability to pay more than $30 for a semester-long CE unit for credit (50% and 48%, respectively--in contrast to the 30% among all credit-seekers). But the high school site group had a lower rate of demand for financial aid (35%), and the adult learning center grouping a higher rate (77%) than did any of the other site preference categories.

An effort to understand the curious relationship between CE locational preferences and the demand for financial assistance may or may not be worth the resources that it would entail. However, further analysis of some of the relationships between the CE costs Maine citizens are willing to bear and other CE-related perceptions, preferences, and behavior is undoubtedly worth the

required effort. But, we must now broaden our analysis of the demand for CE by turning to a broader analysis of why Maine citizens might value and participate in continuing education.

NOTES ACCOMPANYING SECTION VIII

[1]That is, how many would support budgetary reallocations from other public uses, or support new tax levies, or some combination of the two sufficient to meet the costs of CE not borne by the individual?

[2]We do so because it is quite clear that a substantial proportion (although not all) of the time spent on CE by participants comes out of their available 'discretionary time'--time which, by definition, is not directly translatable into money. We suspect, too, that some portion of many Americans' travel, particularly that done by private automobile, has some of these same 'discretionary' aspects.

[3]The specification of the "one-way" distance in the travel distance bid does not appear in Question 11; rather, interviewers were instructed to supply it if there was any question in the mind of the respondent as to whether the question referred to one-way or 'round-trip' distance.

[4]The limitations of the Survey items designed to measure potential participants' bids for CE include:

(a) The fact that only some potential participators (those expecting "credit") were asked for their financial aid needs and their dollar bids for CE renders our analysis of the costs CE participants would bear incomplete and cumbersome. We can say nothing about the cash bids of non-credit-seeking potential participants (35% of the potential CE demand), nor can we estimate the perceived cash value of the "for-credit" feature. The sequencing of those not seeking credit around the cash bid (Questions 13c and 13d) forces our analysis of costs to shift its focus back and forth from all potential participators to just those desiring credit for their participation.

(b) The CE activity referent of the requested bid is not always clear. The measure of travel price refers to the object of the bid only as "a learning activity" (emphasis added). The measure of the time offer refers to "learning activities" (emphasis added). For the subset of respondents asked for dollar bids, the referent is an equivalent of a one-semester, three-credit college course. Ideally, all three 'requests for bids' should have had the same explicit specifications--and should have been geared explicitly either to a common and well-defined CE service package unit or, even better, to the specific activity most desired by the potential respondent in terms of subject matter, location, and medium of presentation.

(c) None of the measures refers explicitly to a willingness to pay. The measure of the time bid asks "how many hours . . . can you afford," and the measures of travel distance offered and cash bid refer to "how far would you be able to travel" and to "the amount you would be able to pay" (emphasis added).

(d) One assumption built into the design of the survey instrument is that those who fail to respond in the affirmative to Question 3, ". . . would you like to take part in some form of further learning activity," are assumed to be unwilling to bid anything for participation in CE in the near-term (next two years). But as we have observed above (Section V, note 8), because of the ambiguity of the word "further," some respondents wanting to continue their present participation into the future (and, conceivably, willing to pay a great deal to continue) could well have been excluded from the ranks of potential CE participants. Others may have answered Question 3 in the negative, and hence have been assumed to be willing to bid nothing for CE--when, in fact they were willing to pay something. That is, when they said they would "not like" to participate they were not rejecting CE participation, per se, but (their perception of) the current "asking price" for CE. On the other hand, some who said they would like to participate may, in fact, have been unwilling to pay anything for the opportunity. That is, they were assuming, when asked if they'd "like" to take part in CE, that the asking price of CE was zero, that CE was being offered "free" in the broadest sense of the word.

(e) We have measures, admittedly inadequate, of the prices bid for future participation in CE. But we have no direct measures of what current participators are paying for their participation. Nor do we have prospective participants' perceptions of asking prices--of what it might actually cost them to participate.

(f) Our measures of bid prices are based on a totally fictitious, and a not-very well structured, hypothetical CE marketplace. We doubt if any of the Survey respondents assumed that their bids were legally binding. In the "real" marketplace for CE they might not be willing actually to pay what they bid for CE in the interview. They might conceivably be willing to pay more; they might not be willing to pay anything. Unfortunately, short of a real-time experiment, there is no way of simulating the actual market for CE.

[5]The difference is significant at the .07 level (chi-square test).

[6]The Tau_c coefficient for the relationship between current participation and miles willing to travel is significant but not very strong (.10). The Tau_c describing the link between demand for credit and miles bid is higher among the few currently participating (.21) than among the many not currently participating (.13); the coefficients are significant at the .01 and .002 levels, respectively.

[7]The 14% in Table VIII-A2's "$150 or more" category include 5% who said that $150 was the highest amount they'd pay and 9% indicating they'd pay $180 or more. (See the frequency distribution of Question 13d in Appendix A.)

[8]The Tau_c coefficient measuring the strength of the relationship between current participation and the amount of the money bid for a one-semester course is a modest .10. (The coefficient is statistically significant at the .01 level.)

[9]$Tau_c = -.31$; the relationship is significant at the .0001 level.

[10]With the "don't know" responses to the questions measuring time, distance, and monetary bids removed from the analysis, the Tau_c correlation measuring the relationship between time bids and travel distance bids is a modest .18. Among

respondents desiring CE for credit, the correlation is .16 for the time-distance relationship, .22 for distance-money, and only .10 for time-money.

[11]It is possible that some desiring CE would raise their bids on one or two cost dimensions in order to offset what they thought would be excessively low bids on another dimension--perhaps in response to some subconscious guilt feelings: If they can't "pay their share" of one kind of cost, they ought to offer to "pay more than their share" of another kind. In seeming confirmation of this hypothesis is the significant (although weak) positive relationship in the Survey data between requests for financial aid and the amount of time respondents were willing to commit to CE. However, there are other equally plausible explanations for that relationship.

[12]Ideally we should also have measured each respondent's trade-off function between time and travel distance, time and money, and travel distance and money--in the context of his or her participation in CE. To do so successfully, however, would have required something approaching a methodological breakthrough in social science methodology.

[13]The chi-square significance levels and Cramer's V coefficients for the relationships between the typology of most desired subjects and bid prices are, among all desiring CE (Table VIII-B1): subject-hours per week, .0001, V = .18; and subject-distance, .0001, V = .20. Among all desiring CE for credit (Table VIII-B2): subject-hours per week, .005, V = .20; subject-distance, .0001, V = .23; subject-dollars per semester unit, .02, V = .19; subject-need financial aid, .02, V = .22.

[14]The chi-square significance levels and V coefficients for the relationships between "most appropriate" location and the bid price dimensions are, among all desiring CE (Table VIII-C1): location-hours per week, .0001, V = .17; and location-distance, .0001, V = .19. Among just those desiring CE for credit (Table VIII-C2): location-hours per week, .02, V = .18; location-distance, .0001, V = .21; location-dollars per semester unit, .0001, V = .21; location-need financial aid, .002, V = .22.

IX. THE "WHYS" OF DEMAND FOR CONTINUING EDUCATION: AN INTEGRATIVE ANALYSIS

To this point we have not yet addressed two crucial questions in a comprehensive fashion: Why do so many Maine citizens desire continuing education while so many others do not? Why are some citizens actually participating in CE while so many others are not? To be sure, we have described the CE demand rates--current and potential future--across a number of socio-economic groupings. But such description is not the same as an explanation. And while the just-completed description of the costs citizens say they are willing to bear to participate in CE says quite a bit about the intensity of their demand for CE, and suggests some reasons why so many who desire CE are not currently participating in it, it casts little light on the question of why people value CE as little or as much as they do.

A more complete understanding of the "whys" of the demand for CE requires that we broaden our focus to include both of the elements that we would expect to be implicated in a predisposition to participate in CE or the immediate decision to accept or reject an opportunity to participate in CE, or the decision to seek such an opportunity. Thus, we should attempt first to understand (1) the kinds of benefits, if any, that people feel they may derive from participation in CE, and (2) the possible opportunity costs that citizens perceive would be connected with their participation in CE, the latter including not only what they feel they can forgo--their bid prices--but also the gap, if any, between their bid prices and their perceptions of asking prices.

Having explored these immediate motivations or predispositions, positive and negative, which are most proximate to--and are the "stuff" of--the decision to reject, accept, or even to seek out a CE opportunity, we should then (3) attempt to understand the sources of those predispositions. This would be a difficult task even under the most propitious of circumstances. The fact and value premises contributing to those predispositions are doubtless legion and

of diverse and complex origins. And the CE Survey instrument was not designed to deal with the more immediate antecedents of value orientations to CE. Nonetheless, we can carry the explanatory analysis backward in time--lumping together several analytic steps--and attempt statistically and theoretically to link the predispositions with the objective circumstances in which citizens live now and lived in the past: their demographic and socio-economic group attributes. Finally we should try to estimate (4) the relative importance of these distant and more recent background characteristics, of the perceived costs, and of the perceived benefits, in contributing to citizens' decisions for or against current participation and possible future participation in CE.

The Perceived Benefits and Costs of CE[1]

Survey respondents had as many as two opportunities to indicate the kinds of benefits they perceived as possibly accruing to them from their current and/or possible future participation in continuing education.

"Reasons" for Participating

Potential CE participants (i.e., those expressing an interest in "further learning activity" in Question 3) were shown a list of ten "possible reasons for being interested" in CE. They were then asked to indicate which reasons they would "consider important" in their just-expressed "decision to pursue further learning" (Question 6a-k). All ten of the "reasons" are statements of what are virtually consensual norms in American society. That is, the "reasons" are possible benefits of CE. Thus, although a few respondents might not have valued some of them (e.g., "work toward a degree"), and a few more may have been indifferent to some of them ("learn more about how to solve community problems," "be a better parent, husband, or wife"), the decision

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[1]Footnotes will be found at the end of the Section.

faced by the typical potential participant was not whether the "reason" was a "good thing" in itself but whether the respondent thought the kind of CE participation he or she had in mind would produce that particular benefit.

It is not surprising then that the typical potential participant listed five or six of the ten as an "important reason" for participation. The most often selected (by 81%) was "personal satisfaction, personal happiness" (see Table IX-A). Five other "reasons" were cited as important benefits by more than 50% of those desiring CE: "to learn something new, cultural enrichment" (64%), "improve income" (59%), "meet new people, do something new" (56%), "deal more effectively with personal situations and problems" (55%), and "prepare for a job or a new job" (53%). Least often cited as important, but still named by 32% as important in the decision to pursue learning, was "to work toward a degree." (One might speculate--we have not paused to test the hypothesis--that factor analysis might yield two principal components: one explicitly economically instrumental--"job requirement, improve income," etc.--the other aimed at more diffuse and non-economic goals.)

Because the "reasons" question was asked only of the 45% indicating an interest in CE, we cannot use variation in the responses to it statistically to 'explain' variation in the potential demand variable. But presumably we could use responses to the items to understand why some who desire CE are currently participating, but most are not. However, there is a statistically significant difference between participators and non-participators on only one of the "reasons": "To work toward a degree" was selected as important by 52% of the current participants but by only 28% of those not currently participating.[2]

In addition to the significant difference in importance of the credit toward the degree as a benefit, Table IX-A includes two other items which distinguish current participators from others desiring CE. The former are

TABLE IX-A

REASONS FOR DESIRING CE AMONG THOSE CURRENTLY AND THOSE NOT CURRENTLY PARTICIPATING IN CE

Reasons for Desiring CE (Q6A-J)	% Saying Indicated Reason Would Be "Important" in Their "Decision to Pursue Further Learning"		
	Among All Desiring & Participating in CE	Among All Desiring But Not Participating in CE	Among All Desiring CE
Personal satisfaction, happiness	80	81	81
Learn something new, cultural enrichment	70	63	64
Deal more effectively with personal problems	57	54	55
Improve income	54	60	59
Prepare for a job or a new job	54	53	53
Meet new people; do something new	53	56	56
Work toward a degree	52	28	32
Job requirement, perform job better, promotion	47	45	45
Be a better parent, a better husband/wife	46	46	46
Learn how to solve community problems	45	39	40
(N)	(122-124)	(652-656)	(774-779)

somewhat more likely to stress the importance of "learning something new," but less likely to report that income improvement was important.[3]

All-in-all, the "reasons" questions are of little use in understanding perceived benefits of CE. The items were not asked of the 55% indicating no interest in CE, and they fail to bring us very far toward an understanding of why some of those desirous of CE are participating in it but why so many aren't.

"Barriers to CE"

Fortunately, all Survey respondents, not only those desiring CE in the near-term, were asked for "important reasons" for their "not engag(ing) in some kind of learning activity in the next two years" (Question 16).[4] A list of 17 possible reasons (and an indication that "other reasons" could be added) was supplied to each respondent.

While we have for convenience labelled the 17 possible reasons for not participating as "barriers to CE," the list consists in part of statements denying that benefits will accrue from participation in CE and in part of statements of the possible costs of participation. Two of the 17 statements produced almost no variation in responses: "Teachers would not understand my learning needs and problems," and "Teachers would not understand my language or culture" were assented to respectively by only 4% and 2% of all respondents (see Table IX-B).[5] (Hence we make no further mention of them.) Of the remaining 15, four would appear to be statements denying that CE participation will produce benefits. These are "Further education would not help," which 24% chose as a reason for not participating in CE; "Couldn't do the work" (i.e., there would be no benefit in trying), to which 11% admitted; "Too old to return to school" (i.e., "you cannot teach this old dog new tricks, and if you could, he wouldn't benefit from them"), mentioned by 32%; and "Lack interest in formal education," listed by 35%--including 56% of those not desiring, but only 10% of those desiring, continuing education. Two of the 15 mix concepts of benefits and costs: "Available activities aren't useful" and "Available activities aren't interesting" (i.e., "there are no benefits from those offerings available at low travel distance costs"), mentioned respectively by 23% and 27%. The remaining nine "barriers" are rather clear to explicit statements of possible costs of participation (see Table IX-B): "costs" (i.e., money costs), narrowly topping

TABLE IX-B

POTENTIAL BARRIERS TO CE AMONG THOSE PARTICIPATING, DESIRING, AND NOT DESIRING

	% Saying This Might Prevent Participation			
Barriers (Q16A-Q)	Among All Currently Participating in CE	Among All Desiring CE	Among All Not Desiring CE	Among All
Cost	38	48	28	37
No location nearby	34	39	16	27
Available activities not useful	23	25	21	23
Available activities not interesting	29	27	27	27
Can't attend when activities scheduled	37	43	15	28
Home responsibilities	34	39	27	32
Job responsibilities	40	38	22	29
Transportation problems	16	23	17	20
Child care problems	15	20	10	15
Lack of enrollment information	7	14	11	12
Teachers wouldn't understand needs, etc.	3	4	4	4
Teachers wouldn't understand culture, etc.	2	1	2	2
Further learning would not help me	7	5	40	24
Not enough energy	7	8	25	17
Couldn't do the work	5	4	16	11
Too old to return to school	6	9	51	32
Lack interest in more formal schooling	14	10	56	35
(N)	(160-165)	(759-775)	(891-927)	(1,650-1,700)

the list of all barriers--37% saw it as a barrier; "no location nearby" (27%) and "transportation problems" (20%), both obviously measuring perceptions of travel distance strictures; "can't attend when learning activities are schedules" (28%), "home responsibilities" (32%), "job responsibilities" (29%), and, less clearly classifiable in the time stricture category, "child care problems" (15%); "not enough energy" (17%)--perhaps a fourth dimension of costs; and "don't know how to get enrolled, how to get information" (12%), which could be subsumed under time and/or money costs, but is traditionally treated as a separate 'information costs' dimension.

Despite the fact that the "barriers" questions required that many respondents wind their way through double negatives (see note 4), they produced several remarkable patterns of responses (see Table IX-B):

1. All four of the benefit-oriented items distinguish (in three cases very clearly distinguish) those who desire CE from those who don't, with those desirous of CE more likely to deny that benefits will not be forthcoming (i.e., more likely to assert that benefits will be forthcoming).

2. All nine of the cost-oriented items produce statistically significant Tau_c correlations between desire for CE and agreement that the cost involved might prevent participation. Of the nine coefficients, eight are positive, indicating that those desiring CE were much more likely than those not desiring CE to indicate that cost considerations entered decisions about participation.

Thus, considering only the 13 items in Question 16 which quite clearly measure costs or benefits, but not both, persons desiring CE were significantly more likely than those not desiring CE to see as "barriers" to their participation:[6]

- Cost (a measure of cost)
- No location nearby (cost)
- Can't attend when activities are scheduled (cost)
- Home responsibilities (cost)
- Job responsibilities (cost)
- Transportation problems (cost)
- Child care problems (cost)
- Lack of enrollment information (cost)

But those desiring CE were significantly less likely to see as barriers:[7]

- Further education would not help (i.e., a negative of benefit)
- Not enough (physical/mental) energy (cost)
- Couldn't do the work (negative of benefit)
- Too old to return to school (negative of benefit)
- Lack interest in more formal education (negative of benefit)

3. Among those desiring CE, the benefit-oriented items utterly fail significantly to distinguish those currently participating from those not currently participating. Only on the (money) "cost," and "transportation" (cost), and the "enrollment information" (cost) items do these two groups differ significantly--and even then not very strongly; those not currently participating were the more likely to indicate that those costs might prevent future participation.

These data suggest that citizens decide the question of the desirability of participation in continuing education largely on the basis of benefit criteria; if few or no benefits are perceived, the possible costs of participation are irrelevant. On the other hand, the question of whether someone who desires CE will actually participate in it is not a question of benefits; rather, to a significant (but far from overwhelming) degree it is a matter of costs--dollars, travel distance, time and information. And this analysis leads us to predict that we will have considerable success in 'explaining' variation in the "desire for CE," but that we shall have considerable difficulty explaining why some actually participate in CE and others don't.

The Socio-Economic Correlates of Benefit and Cost Perceptions

If denials that benefits will not accrue from participation in CE, i.e., if assertions that personal benefits will be forthcoming from CE, are quite strongly associated with the desire for such participation, we should like to understand the origins of such perceptions. And if, among those desiring CE, perceptions of participation's costs (in the broadest sense) are generally

more widespread among those who aren't participating than among those who are, we should again want to explore the reasons for those cost perceptions.

Beliefs that significant costs are associated with CE participation are likely in many cases to have roots in objective as well as subjective reality. That is, we can anticipate that respondents' perceptions of the 'asking prices' of CE participation are significantly and positively correlated with the actual asking prices--in time and distance, if not always in money. And it goes almost without saying that in most instances no one knows better the opportunity costs accompanying an individual's payment of a set of objective asking prices than that individual.

The quite understandable emphasis in the CE interview schedule on the nature of respondents' CE demand and their perceptions of the proximate costs and benefits of CE, as well as on their socio-economic background characteristics, severely limits the data available to explore the possible causal antecedents of cost and benefit perceptions. For example, to explain why some people perceive particular benefits from CE, others see different benefits, and still others see none at all requires a rather thoroughgoing understanding of the contemporary social and economic context surrounding individuals. But it also likely requires knowledge of their perceptions of the connections between continuing education and education in general, and between education and their particular values and goals. One might say that to adequately understand citizens' perceptions of the benefits of CE one needs data on their "philosophies of education," and, in the extreme, of views of the meaning of human existence.

We haven't the necessary data; indeed, we haven't even remotely plausible surrogates for them. We therefore cannot make the necessary connections. Perhaps all we can do is to look for statistical linkages, if any, between cost and benefit perceptions and individuals' initial and current socio-economic background contexts. Some of these linkages may actually be fairly

direct: the perceptions originate in 'real' circumstances. In other cases the linkages may be at best remote, with data on many intervening links missing. In others, attribution of causal linkages may be spurious: cost-benefit perceptions and the socio-economic attributes may be the common results of other, unmeasured factors.

Group Characteristics and Perceptions of Cost Barriers

Given that CE costs are more likely to be cited as reasons for non-participation by those desiring CE than by those not desiring it, and that variation in cost perceptions is apparently more useful for understanding variation in current participation than in the desire for participation, Table IX-C appropriately limits its scope to the 45% of all respondents who comprise the near-term potential demand for CE.

The Table lists the percentages of those desiring CE (1) who mentioned either of the two clearly distance-related factors ("no location nearby," "transportation problems") as possibly preventing his or her actual participation in CE; (2) who mentioned one or more of the three distinctly time-cost related items as a likely barrier to participation ("home responsibilities," "job responsibilities," or specification of "no time" as an "other" barrier); (3) who listed the single money "cost" dimension as possibly preventing participation; (4) who chose at least one item in each of the three (i.e., who perceived distance and time and money barriers); and (5) who claimed that none of the three costs was a barrier to his or her decision to participate or not to do so.

Although Table IX-C employs data based on respondents' generalized perceptions of the cost strictures on their possible CE participation, one of the conclusions to be drawn from it matches those drawn from Tables VIII-A4 and -A5 (which were based on the specific maximum bids of time, distance and

BARRIERS TO FUTURE PARTICIPATION IN CE: PERCENTAGES OF THOSE DESIRING CE WHO MENTION DISTANCE, TIME, OR MONEY 'COSTS' AS "REASONS" WHY THEY MIGHT NOT PARTICIPATE; MAINE-WIDE AND WITHIN SELECTED GROUPS

All Desiring CE	Distance	Time	Money	Distance + Time + Money	None of 3	(N in Group Who Desire CE)
State-wide	48	58	48	18	16	(777)
Region						
Aroostook County	69	53	60	28	9	(154) unwtd.
Washington County	62	63	44	25	9	(118)
H'cock, Penob., Piscat.	45	57	41	15	17	(176)
Nine central counties	56	64	54	25	11	(180)
Cumberland & York	28	46	39	6	28	(155)
Size of town/city						
Less than 2,500	62	58	52	26	11	(260)
2,500-4,999	46	56	43	13	17	(159)
5,000-9,999	46	59	55	18	13	(148)
10,000-24,999	38	57	41	13	24	(136)
25,000 or more	31	57	40	14	27	(72)
Sex						
Men	45	55	46	17	19	(352)
Women	51	60	50	20	14	(423)
Ethnicity						
Franco-Americans	47	59	55	24	19	(133)
Age						
18-24	42	57	59	25	16	(120)
25-34	52	68	58	22	7	(261)
35-44	43	64	43	17	17	(169)
45-54	40	48	35	12	26	(109)
55-64	44	40	28	10	32	(77)
65-74	74	32	43	14	10	(29)
75 & older	68	10	19	6	23	(6)
Education						
8th Grade or less	59	54	56	23	10	(58)
9th-11th Grade	50	56	63	22	10	(76)
12th Grade	50	60	54	22	16	(304)
1-2 yrs. Post-high	37	61	37	11	16	(131)
3-4 yrs. College	49	55	41	13	18	(158)
Grad/professional school	49	51	31	15	27	(52)
Employment status						
Full-time	42	66	45	18	17	(381)
Part-time	57	62	57	24	8	(92)
Looking for work	59	40	60	14	15	(55)
Retired/disabled	49	19	35	6	31	(66)
Housewife	52	58	50	21	12	(166)
Family income						
Under $3,000	62	29	62	11	16	(47)
$3,000-4,999	64	73	73	35	3	(47)
$5,000-6,999	63	54	66	30	10	(62)
$7,000-9,999	50	59	59	25	13	(110)
$10,000-14,999	46	64	48	18	15	(174)
$15,000-19,999	39	71	34	13	16	(120)
$20,000 & up	38	54	26	9	24	(115)

money that respondents said they could afford), and from other analysis included in Section VIII. That is, the three barriers are only modestly related to one another. Each of the types of cost barriers was perceived by about one-half of those desiring CE as possibly preventing their actual participation. A bit more than one-sixth thought they faced all three barriers, about one-sixth saw none of the three as affecting them. Thus, about two-thirds of the potential participators saw one or two of the cost dimensions as barriers to their participation.[8]

Perceptions of the existence of the barriers vary significantly across all of the socio-economic and demographic groupings except two: sex and ethnicity. Although the percentages in Table IX-C generally point in the direction of the "conventional wisdom," none of the sex-cost barrier or ethnicity (Franco-American versus all other)-cost barrier relationships are statistically significant (at the .05 level).

But virtually every other portion of Table IX-C displays statistically significant (if not very strong) group-cost barrier differences. Among those desiring CE, distance is significantly more likely to be perceived as a barrier by those living in Aroostook or Washington counties, living in communities of less than 2,500 people, by those 65 years of age or older, and by citizens with incomes less than $7,000. Distance is significantly less likely to be seen as a barrier by those in the Cumberland-York Region, those in communities of 10,000 or more people, by those with one or two years of post high-school training, and by those with incomes in excess of $15,000.

A shortage of time, on the other hand, is perceived as likely to prevent their CE participation by significantly above-average proportions of those between the ages of 25 and 34, and by those near (but not at) the bottom of the income ladder as well as by those near (but not at) the top of it. Time is significantly less likely to be perceived as standing in the way of further

education among those desiring CE who are also living in Cumberland or York counties, those 55 and older, the retired, and those with miniscule incomes.

Actual money costs were seen as significantly more likely to constrain CE among citizens of Aroostook County, those under 35 years of age, and, perhaps most understandably, by adults with less than a high school education, by those working part-time or seeking work, and by those in families where the annual income was under $10,000.

Given that a citizen who perceives that he may not be able to pay either the distance or the time or the dollar costs of CE is likely to be a person who is poor, relatively isolated, and quite busy, it is not surprising that the groups significantly overrepresented among those perceiving all three kinds of barriers included those

- Living in Aroostook County
- Living in communities of less than 2,500 people
- Those with a high school education or less
- Those with incomes of $3,000 to $10,000

On the other hand, the groups significantly overrepresented among those perceiving none of the three cost barriers were those

- Living in the Cumberland-York region
- Living in communities of 10,000 or more people
- Aged 45-64
- Whose education extended beyond four years of college
- Who were retired
- With family incomes in excess of $20,000 annually

However, of all the cost barrier data in Table IX-C, the most striking are those of the 'time' cost differences among the employment status groups and the 'money' cost relationship with family income.

Group Correlates of Benefit Perceptions

As we have noted, analysis of the four clearly benefit-related CE "barrier" items derived from Question 16 does not come without difficulties, not the least of which is the wording of the items themselves (see note 4). The items fail to capture a wide range of potential benefits; they are worded as

general denials of benefits, but the types of benefits denied are at best implicit. But in the absence of responses from the 55% not desiring CE to the Question 6 items on the "reasons" for participation, we have no choice but to use the four items from Question 16.

Survey responses to the four benefit questions are themselves quite highly and positively correlated. To take the extreme case, the Pearsonian correlation (r)[9] between responses to "Lack interest in more formal schooling" and "Further education would not help me much" is .54. The correlation between the other two benefits items, "I probably could not do the work" and "I am too old to go back to school" is .32.

Responses to the four questions (which we treat as if they were simple denials that CE would bring benefits to the respondents) are negatively correlated with the desire for CE, and quite strongly so in three of the four instances:

Further learning would not help me much	-.41
I probably could not do the work	-.17
I am too old to go back to school	-.42
Lack of interest in any more formal schooling	-.48

Further, we have explored the relationships between each of the four items and the socio-economic and demographic variables utilized in Table IX-C and similar previous tables. The benefit items are statistically related to several of the group attributes. The statistical links are strongest precisely where one might assume that causal linkages are most likely to exist and to be most direct. For example, perception of a barrier against an older person reaping CE benefits, "I am too old to go back to school," is very strongly and positively correlated with age (r = .60) and with being retired--rather than being in the labor force or a housewife (.46). Perceptions of an absence of CE benefits due to age is, in addition, negatively related to respondents' levels of formal education (-.35) and family income (-.31). We would suspect

that the correlation with income must certainly be spurious, and that with education at least partially so. That is, the statistical correlation is there, but it does not describe a causal relationship.

Lack of ability as a barrier to the receipt of benefits from CE, "I probably could not do the work," is slightly more highly correlated--in this case negatively--with education (-.25) than with any of the other background variables we examined. Lack of interest in more schooling and an inability to perceive any personal, instrumental benefits from CE ("Further learning won't help me much") are fairly strongly and almost identically related to background variables. For example, denial that personal instrumental benefits will come from CE participation is positively correlated with age (.35) and retirement status (.30) and negatively related to education (-.23) and income (-.20).

An Integrative Analysis of the Demand for Continuing Education

We have now introduced a number of factors which are statistically related to the demand for continuing education and which may cast some light on why some citizens of Maine desire CE, a much smaller number participate, but the majority do neither. These factors--we call them 'variables'--include but are not limited to the demographic, social, and economic attributes first introduced in Section III (region, community size, sex, ethnicity, age, education, employment status, and income). The variables also include the benefits and the costs perceived by respondents to be implicated in their possible participation in CE. We viewed these data as representing, albeit in a very limited way (particularly in the case of CE benefits), the variables most proximate in time to CE participation decisions. Our analysis of the perceptual data indicate that the effects of perceptions of CE's benefits are apparently predominantly antecedent to the effects of perceptions of CE's opportunity costs. Perhaps citizens decide whether CE is worthwhile

in the abstract. If it is, they will be predisposed to participate in CE; they will say that they'd like to participate. But if citizens are desirous of CE, our findings support that they actually participate only when the subjective costs to them--the opportunity costs of actually participating--are less than the perceived benefits. However, the CE Survey data appear not to provide much assistance in understanding why some of those desirous of CE actually participate while others don't.

We have speculated that these perceptions of CE's costs, and particularly of its benefits, are likely to be formed by a complex of factors most of which were unmeasured in the CE Survey. However, these factors may include--or may thenselves have been caused by--some of the objective social and economic conditions in which the respondents currently find themselves. The unmeasured variables, as well as the current socio-economic status of the individual, may in turn have been in part determined by the earlier social and economic context in which the respondent was reared. Indeed, in Section IV we drew a distinction between the 'period effects' of age and the 'aging effects' of age; the former includes the effects of the historical context in which one was reared and, specifically for our concerns here, its effects on the value an individual currently attaches to education.

Thus, we have introduced a multitude of factors that plausibly may be causally related to the desire for CE and to actual participation in CE. However, previous to this section we have tried to avoid use of terminology that would imply causation, such as "cause," or "determine," or even "explain." Instead, we have employed such terms as "relationships," especially "statistical relationships," "associations," or "possible effects." In fact, as early as Section III we expressed concern that some of the statistical relationships we had described might reflect 'spurious' rather than causal relationships. For example, whether the finding that lower actual and potential CE demand was

linked statistically with being retired (as opposed to being in the work force) was actually caused by the retirement status or whether it was predominantly the effect of age's effect on both employment status and CE demand.

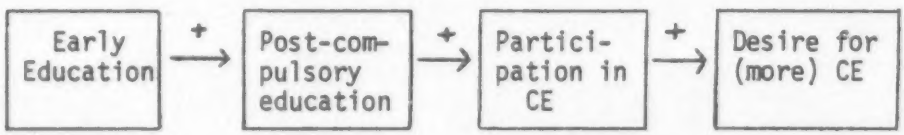
Our concern for the possible spuriousness of statistical relationships has been heightened by the fact that, Section IV aside, analysis has been limited to 'bi-variate' (sometimes called 'zero-order') statistical relationships, i.e., relationships between variables taken two at a time. For, other things remaining the same, bi-variate statistical analysis is more likely to produce spurious results than is multi-variate analysis (relationships among variables taken three or more at a time). What is more, if we are to deal comprehensively with the many variables which we have found to be statistically associated with CE demand (at the 'zero-order' level); if we are to determine which relationships are most likely to be spurious, which are not, and which variables are apparently the most important determinants of CE demand; then we must employ multivariable analysis.

Use of multi-variate analysis, while reducing the possibility that we shall attribute causality where none exists (and of the failure to attribute causality where it does exist), does not necessarily solve the problems involved in determining causality. Indeed, short of carrying out a massive program of very carefully designed <u>experimental</u> research, those problems cannot be substantially avoided.

But if we are willing to specify a set of theoretical assumptions concerning (1) what might (and, conversely, what definitely won't) cause people to desire CE (or to participate in CE), and (2) the causal sequence of the hypothesized causes of the CE demand, then multi-variate techniques can be of great assistance. They permit estimation of the importance of each of the hypothesized causal factors--both in an absolute sense and relative to one another, and, hence, allow one to discard one or more assumptions if they are unsupported by the analysis.

An Explanatory Model of the Potential Demand for Continuing Education

We have already generated a number of hypotheses about the variables that may 'cause' a desire for continuing education and the causal order of those variables. Some of these hypotheses have been implicit, others explicit. For example, the epigraph which begins this report asserts that education, like 'Cracker Jack', generates its own demand--beginning with an individual's early years, and, presumably, continuing into his post-traditional, i.e., continuing, education. Schematically, the 'Cracker Jack' hypothesis might be described this way:

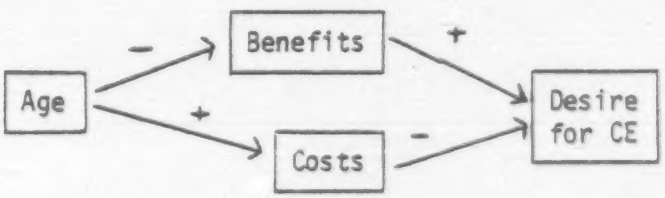


The argument is not, of course, that going to school itself causes the demand. Rather, it is the pro-education values and perceptions that substantial levels of education reflect, reinforce, or generate that eventually lead to the higher valuation of continuing education. Education also heightens the demand for CE by helping the individual acquire the economic means whereby he may continue his education. That is, many types of education reduce the opportunity cost of further education.

We have also discussed at some length the likely effects of age on CE demand. A distinction was made between the 'period effects' of age and the 'aging effects' of age. In the former case, 'age' stands not for itself but for the particular historical period in which the individual went through that portion of his life cycle in which formal education is usually acquired. In the last half-century and more education has come to be valued more and more highly. At the same time, the opportunity costs of participation in education have been declining. As a result, the younger the adult the generally

more positive are his views of education and the more likely he is to participate in CE. So long as the trend continues, the period effects hypothesis specifies that the higher the current age, the lower the demand for CE.

The aging effects of age point in the same direction. Since education is looked upon in part as a 'capital investment', older people, particularly those well along in years, may invest less and less in CE on the grounds that the 'payback' period for them may be too short to make the investment worthwhile. With age comes the perception, to some, that there will be no benefits for them from trying to learn because they "won't be able (mentally) to do the work." Finally, physical aging increases the opportunity costs of travel distances and perhaps of the use of physical energy for CE. Physical and chronological aging may increase the opportunity costs of CE's monetary asking prices if retirement from the labor force lowers income more than it reduces living costs. However, retirement reduces the opportunity costs of the time invested in CE. But overall, both the period effects and the aging effects of age lead to essentially the same hypothesis:



Income and particularly employment status were found to be associated with desire for CE. However, the possible spuriousness of the negative relationship between retirement and potential CE demand was raised: retirement is very strongly related to age, and age is strongly negatively related to desire for CE. Is it just aging, just retirement, or both that cause smaller proportions

of the elderly than of the young to desire CE?

Weak statistical relationships exist between size of community and potential future demand (the demand rates are highest in the middle-sized towns and lowest in the cities), and marginally significant relationships were found between region and demand (Aroostook higher, Cumberland-York lower) and between sex and demand (with women marginally more likely to want CE). But we raised the question of whether the region-demand relationships might not be spurious. After-all, how could region of residence, per se, affect whether or not an individual desires CE?

We found no simple, bi-variate relationship between Franco-American ethnicity and potential demand for CE (or any of the CE demand variables, for that matter). But could it be that if other background variables are taken into account that ethnicity might have a connection with CE demand?

We subsequently hypothesized that individuals' early social background circumstances would affect orientations to education in general. These orientations could affect citizens' current socio-economic conditions, their perceptions of the benefits flowing from CE, and their ability to bear the opportunity costs of participation. However, analysis in this section has suggested that perceptions of CE benefits appear to have a much greater impact on the desire for CE than do perceptions of CE's costs.

While the only Survey questions available for exploring perceptions of the benefits of CE among those desirous and not desirous of CE are not really adequate for the prrpose, we did find statistically significant links between background factors and perceptions of benefits, and between perceptions of benefits and the desire for CE.

Note, too, that we have generated a large number of hypotheses, all of them implicit, about what does not play a causal role in generating potential demand for CE. That is, everything that we have not attempted to link with the demand for CE is implicitly hypothesized not to affect it. It goes without saying that there are a large number of unmentioned variables. If any of them (much less many of them) do, in fact, substantially affect the potential demand for CE, our explanatory model will be 'misspecified', i.e., incomplete and possibly misleading. In addition to suggesting the types of variables that may be causally linked to demand, we have already specified the basic causal relationships among them:

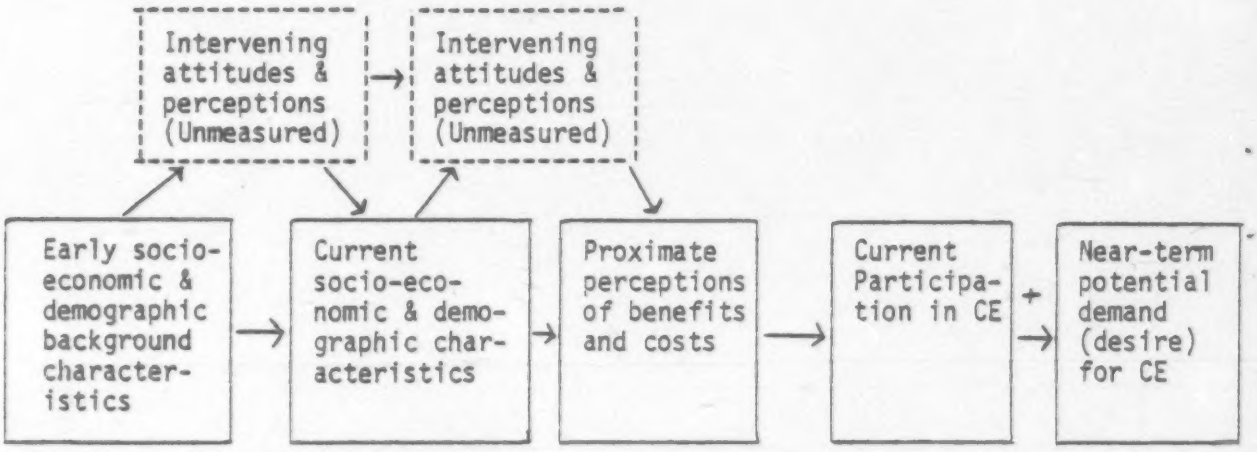

Intervening attitudes & perceptions (Unmeasured)
Intervening attitudes & perceptions (Unmeasured)
Early socio-economic & demographic background characteristics
Current socio-economic & demographic characteristics
Proximate perceptions of benefits and costs
Current Participation in CE
+
Near-term potential demand (desire) for CE

FIGURE IX: AN EXPLANATORY MODEL OF THE NEAR-TERM DEMAND FOR CE

The arrows indicate the hypothesized hierarchical order of causation. Early background characteristics are assumed to cause intervening attitudes and perceptions regarding the value of education as well as current social and economic attributes. The current attributes may cause intervening attitudes and/or proximate perceptions of CE's benefits and costs. The interaction of perceived costs and benefits may or may not lead to current participation in CE, but if it does, it is hypothesized to increase the likelihood that the individual will desire to participate in the future. Note, however, that the early and current socio-economic and demographic characteristics, as well as

the unmeasured intervening attitudinal and perceptual variables, are hypothesized to effect the desire for CE only by first affecting the proximate perceptions of CE's benefits and costs. That is, only two types of variables--current perceptions of the costs and benefits to the individual of possible CE participation and actual current participation in CE--are hypothesized to have 'direct effects' on desire for CE. All the other variables are hypothesized to have only 'indirect effects', effects 'channelled' through intervening variables.

We now test two of the major hypotheses embedded in the explanatory model: (1) that each of the variables we have attempted to link with the demand for future participation in continuing education (the 'dependent' variable) has a significant effect on that demand; and (2) that the explanatory variables together can account for a substantial proportion of the variation in the demand variable.

The effects of the independent variables: early background. Since some of the social background attributes of individuals occur earlier in the individual's life history than other attributes, we divided such factors into two classes, 'early' and 'current'. The former consist of the individual's age--which is of course determined by the year of his or her birth; sex (determined before birth); and ethnicity--which is in one sense also determined before birth.[10] Since the explanatory model assumes (as common sense would assert) that for any given individual, the 'early' attributes precede in time all the other attributes or attitudes we have explored, and since these antecedent variables are assumed possibly to 'cause' some of the intervening variables, the effects of the early variables on demand should not be statistically controlled for the effects of variables later in the causal chain. That is, all of the relationships between the early variables and CE demand should be 'credited' to the early variables. Variation in age (A), sex (S), and ethnicity (F) variables

together explain about 22% of the variation in potential demand (Y) as measured by the coefficient of multiple determination. (That is, the coefficient of multiple determination resulting from the regression of demand on age, sex, and ethnicity--$\underline{R}^2_{YASF} = .22$.)

Of the three, 'early' variables, age has by far the greatest impact. It is, of course, a negative impact. Controlling for the effects on demand of ethnicity and sex, the standardized (partial) regression coefficient (b^* or beta) measuring the effects of age on demand, controlling for the effects of sex and ethnicity on demand (i.e., $b^*_{YA \cdot SF}$) is -.47.[11] The effects of sex, controlling for age and ethnicity, are also significant but an order of magnitude smaller: $b^*_{YS \cdot AF} = -.07$, signifying that controlling for age and ethnicity, women are more likely than men to want to participate in CE.[12]

The contribution of (Franco-American) ethnicity to the explanation of demand is statistically insignificant--as was the simple relationship between the ethnicity variable and potential participation described in Table III and Section III.[13] At this point, one might be tempted to drop the Franco-American ethnicity variable for the explanatory model. But to do so would be a mistake, as we shall shortly see.

Current socio-economic and demographic attributes. An even dozen measures of respondents' current social, economic, and demographic attributes were initially inserted in the model along with the three 'early' background variables. The regression of potential demand on the 15 early and current background variables allowed us to remove nine of these in the 'current' category. These background variables excluded from the model on grounds of insignificant explanatory power include all of the regional variables, the community size variable (when measured in a way that captures the curvilinear relationship between size and CE demand--highest demand in the medium-sized

towns), "employment status--housewife" "employment status--employed full-time," and family income. They have been omitted because they have no significant independent effects on desire for CE when the effects of the other social, economic, and demographic background variables (early and current) are taken into account. That is, their simple, bi-variate statistical relationships with desire for CE, described in Section III, do not, in the context of our model (and given their low b^* coefficients), reflect causal relationships; their statistical associations with future CE demand are spurious.

Three current socio-economic and demographic variables that do appear to have causal links with potential CE participation are education (E), retirement status (R), and town size (T). Of these, education makes by far the largest contribution ($b^*_{YE \cdot ASFRT} = .21$). However, town size (when measured in a linear fashion, small to large), has a significant negative impact on the desire for CE ($b^*_{YT \cdot ASFER} = -.10$), even when that impact is controlled for age, sex, ethnicity, education, and the retirement status. The "retired" variable also has a significant negative effect on demand ($b^*_{YR \cdot ASFET} = -.07$). Thus, retirement status itself, independent of chronological age (or sex, ethnicity, education, or town size) apparently tends to depress the likelihood that the individual will want to take part in CE.[14]

When the effects of education, retirement and town size are added to those of age, sex, and ethnicity, the amount of variation in potential CE demand explained by socio-economic and demographic variables ('early' and 'current' together) rises to 27%.

The effects of perceived costs and benefits. We initially explored the effects on potential demand of all 17 of the variables intended to measure CE's perceived costs and/or benefits (see Question 16 and Table IX-B). Only seven produced statistically significant partial regression coefficients. Further, we

removed five of the seven from the model. "Lack of interest in any more formal schooling" was excluded from further analysis. Although "more formal schooling" is a much narrower concept than "more continuing education" (and despite the fact that this variable had a higher partial coefficient than any other of the 16), the expression "Lack of interest" makes the wording of the question on which this variable is based too close to the wording of the potential demand question--the very variable we are trying to explain. That is, "lack of interest" is essentially synonymous with "no, I would not like to take part in some form of further learning activity."

Four 'cost' variables with significant partial coefficients were also removed from the model. The four were removed because, while their partial coefficients were statistically significant, their signs (arithmetic, not astrologic) were wrong. That is, other things remaining the same, those with money cost, scheduling, and transportation ("transportation" and "no location nearby") problems were more rather than less likely to desire CE. This is the same phenomenon we dealt with in our commentary on the data in Table IX-B: Possible costs of participation are meaningful barriers to participation primarily by those who can see benefits of participation--who are predisposed to participate--in the first place. And since it makes no sense to say that perceptions of CE costs cause people to desire CE participation, we decided that the four cost variables with statistically significant weights in the equation have no significance for our analytical purposes here.

The remaining two benefit variables, "further learning won't help" (H) and "I am too old" (P), each have significant effects on CE demand--even when the effects of the other benefit variable and of all early and current

background variables are taken into account. Agreement that "further learning would not help me much" has very substantial negative effects on desire for CE; specifically, $b^*_{YH \cdot ASFERTP} = -.21$. Agreement that "I am too old to go back to school" also has significant--but less substantial negative effects on potential participation ($b^*_{YP \cdot ASFERTH} = -.14$). Thus, even after we have controlled for the effects of age and of retirement status on the desire for CE, there is still room for yet another age-related variable, this one attitudinal or 'psychological', to have significant effects. Specifically, using the appropriate standardized coefficients we can compare the effects on demand for CE of the various age-related variables

age:	'period', and 'aging' effects (A)	-.4[illegible]
age:	retirement status (R)	-.[illegible]
age:	psychological (P)	-.14

These data may be of considerable interest to those interested in increasing the desire for--and the participation in--continuing education by the elderly. Clearly the 'period' and 'aging' effects are the largest, but the impacts on demand of the elderly considering themselves "retired" or "too old to go back to school" are substantial. As we pointed out in Section II, to the extent that the elderly population of Maine comes to consist increasingly of those reared in years in which education was both more highly valued and more easily available, to that extent aging's depressing effect on the desire for CE participation will abate.

The addition to the model of the proximate attitudinal variables, "further learning won't help" and "I'm too old," increases the variation in demand explained from 27% (for all background variables) to 33%, a meaningful if far from overwhelming increase.

The effects of current participation: "like 'Cracker Jack'"? The variable closest to potential demand in the causal chain hypothesized in Figure IX is current actual participation in CE. If continuing education is like

education in general, and education is indeed like 'Cracker Jack', then individuals currently participating in CE should have a greater likelihood of desiring future CE, than those not currently involved, even after their background characteristics and cost-benefit perceptions are taken into account. In the terms we have been using, if CE is like 'Cracker Jack', then the partial beta coefficient for current participation (C) should be significant and positive. It is: $b^*_{YC \cdot ASFERTPH} = .07$.[15] Thus we concluded that participation in CE breeds participation in CE.

The addition of the current participation variable to the regression analysis does not, however, radically increase the amount of variation in potential CE demand that the model explains. With the addition of this ninth and final explanatory variable, the amount increases (as measured by $\underline{R}^2$) from 32% to 33%.

However, when all nine of the explanatory model's variables are included in the regression equation, the ethnicity variable (Franco-American identification versus any other or none) yields statistically significant and positive independent effects on the demand for CE. Ethnicity is uncorrelated with demand for CE in the simple sense, and is unrelated to demand even when ethnicity's effects are adjusted by any differences in the age and sex compositions of the Franco- and non-Franco portions of the CE sample. However, Franco-American ethnicity does appear to increase to a modest but statistically significant extent the demand for continuing education when the five other background attributes are taken into account. ($b^*_{YF \cdot ASERT} = .04$). And when the effects of the attitudinal variables and current participation in addition are taken into account, the 'weight' of Franco-American ethnicity becomes even slightly more positive ($b^*_{YF \cdot ASERTPHC} = .05$).[16]

The total effects of the explanatory variables. Not all of the variables we earlier attempted to link statistically with a desire for continuing education actually have a significant effect on that demand. We examined a total of 33 possibly explanatory variables. Nine were determined to have estimated total effects that are statistically significant. Thus, given the causal ordering assumed by the explanatory model and the quality of the operational measures of the basic conceptual variables, the nine variables are, in order of their importance in our explanation of the potential demand for continuing education:

Symbol	Explanatory Variable	Total Effects on Potential Demand	Measure of Total Effects (b*)
A	Age	-.47	YA·SF
H	"Further learning wouldn't help"	-.21	YH·ASFERTP
E	Education	.21	YE·ASFRT
P	"Too old to go back to school"	-.13	YP·ASFERTH
T	Town size (linear measure)	-.10	YT·ASFER
R	Retired (rather than not retired)	-.07	YR·ASFET
S	Sex (male)	-.07	YS·AF
C	Currently participating in CE	.07	YC·ASFERTPH
F	Franco-American ethnicity	.05	YF·ASERTPHC

Respondent age is very clearly the single most important variable affecting the potential demand for CE. When the three age-related variables are considered together, they nearly dominate the model.

A feeling that further education lacks direct, perhaps material, benefits also has very substantial negative effects. Formal education has a positive weight, of similar magnitude, suggesting that education creates some of its own demand. Even when controlled by all antecedent variables, current participation in CE independently heightens CE demand. This finding lends further credence to the notion that while (as we saw in Section IV) demand for CE declines with age even when the effects of education are controlled, participation in continuing education stimulates further participation. The demand for continuing education has a built-in generator.

The small but significant negative effects of both "maleness" and of size of community, and the small, positive effects on CE demand of Franco-American

ethnicity are less important, but nonetheless fascinating findings that fairly cry out for further investigation by those interested in the sociology and anthropology of education.

The reader is reminded that the validity of our findings is dependent upon (1) the reasonableness of the causal ordering of variables assumed in the model, (2) by the degree of faithfulness of our operational measures to the underlying concepts for which they are intended to stand, and (3) by the appropriateness of our selection of variables for inclusion in the model of potential demand for CE. We have been less than confident with our performance as measured by criterion (2). The CE Survey interview instrument and data set, while providing an extraordinarily fruitful harvest of CE-relevant data, is in places relatively barren. We have had to make do with distinctly inferior measures of concepts central to the understanding of CE demand. This has been particularly the case with respect to the perceived benefits of participation. Had we had better measures available to us, attitudinal factors proximate to the request for CE certainly would have played a 'weightier' role in our regression analysis.

Misspecification of the explanatory model may be as serious a problem as measurement error. That we have ignored variables crucial to an explanation of potential participation, whether present or absent from the Survey data set, is certainly a possibility. Both factors have doubtless depressed the power of the results of our modeling efforts. Nonetheless, and while explanation of one-third of the variation in the potential demand variable may not appear a significant accomplishment, it is, by the standards of attitudinal research, a rather respectable showing.

Efforts to construct explanatory models of actual current demand for continuing education have been less than satisfactory. We have made the effort to construct such models for two different sample contexts: (1) all respondents,

and (2) just those desiring CE. In both cases the models explain only small proportions of the variation in the demand variables; and the few significant explanatory variables tend to be dominated by one: formal education.

There are several technical reasons why it may be difficult to obtain a high level of statistical explanatory power of current participation in CE--even if our data and theories were better. But an explanation of the much greater power of the model of potential demand than of models of actual participation may rest on a crucial distinction between potential and current actual demand. Whether or not one wants continuing education is solely up to the potential consumer of such education. But for most types of continuing education, whether one actually gets the CE one wants is the result of the interaction of the consumer and the provider, between the demand and the supply. The CE Survey data and, hence, our analysis, is silent with respect to the supply side of the marketplace for continuing education in Maine. But if we do not understand the current level and distribution of CE supply, and the factors that affect it, we shall have a difficult time understanding why some citizens of Maine are currently participating in continuing education while others are not.

NOTES ACCOMPANYING SECTION IX

[1]Tracy Bigney contributed in many ways to the CE Survey and reports from it. One such contribution was a very useful draft of portions of this subsection and the next.

[2]The relationship between current participation and naming the degree "motive" is not very strong, however: Tau_c = .13 (significant at the .0001 level).

[3]Tau_c for participation-"learn something new" is only .04, with a significance level of .06. For participation-"improve income" Tau_c is -.04, significant at the .07 level.

[4]Respondents who indicated in Question 3 that they had no desire to participate were immediately 'skipped' to Question 16. For them Question 16 was quite straight-forward. They were asked, in effect, for the reasons why they had just said "no" to further learning activity. However, for those who did indicate a desire for CE in Question 3, Question 16 came at the end of a long sequence of items measuring the qualities of the CE desired, the CE costs the respondent would bear, etc. For those desiring CE, many of the items in Question 16 were far from straight forward: In many instances those respondents had to deny that a negatively-worded statement embodied a reason for not doing what they said they wanted to do. It goes almost without saying that such items tend to increase measurement error and hence to reduce the statistical significance and strength of relationships among variables.

[5]However, respondents identifying as Franco-Americans were significantly more likely than others to agree with one or both of the statements. However, the ethnic variable explains only about 1% of the variation (r^2 = .01) in responses to the "teachers would not understand" questions.

[6]The Tau_c correlations between desire for participation and the presence of the barriers listed are, in order: .20, .23, .28, .11, .15, .06, .09, .03; all but the last of these coefficients is significant at the .001 level or better.

[7]The Tau_c correlations between desire for participation and the presence of the barriers listed are, in order, -.34, -.17, -.12, -.42, -.46; all of these coefficients are significant at the .0001 level.

[8]But unlike the results of the analysis of objective bid prices (in Section VIII), here we are most rather than least likely to find time and money paired as cost barriers, although the distance-money pairing is also fairly common.

[9]The reader is reminded that r may vary from 1.0, a perfect positive relationship, to -1.0, a perfect negative relationship.

[10]Our measure of ethnicity, psychological identification as a Franco-American rather than with any other group (or with no group), is not of course determined at birth (see Question 45). The decision to identify or not to identify with an ethnic group is one that CE Survey respondents may have made or changed at any time--from childhood up thru the time they respond to the ethnic identification question.

[11]The unstandardized partial regression coefficient (or 'slope') which measures the 'causal-law' linkage between age and potential demand, controlling for the effects of sex and ethnicity ($b_{YA \cdot SE}$), is -.013. Since age is measured in years, and the potential demand variable is scored 1 if the respondent desired CE and 0 if he didn't, that coefficient has a rather straight-forward and useful interpretation: We can say that the effects of age on demand (controlling for the effects of sex and ethnicity) are such that as we move from the youngest to the oldest respondents, the probability of a respondent desiring CE declines by an average of .013 (where 1.000 is certainty), or the percentage of respondents desiring CE declines by an average of 1.3 percentage points per year of increased age.

[12]Given that the unstandardized (partial) slope for the sex variable ($b_{YS \cdot AF}$) is -.068, the findings can be interpreted by saying that the potential participation rate among men is 6.8 percentage points lower than among women, controlling for the effects of age and ethnicity.

[13]Our test of the statistical significance of the standardized partial regression coefficients, and the unstandardized partial 'slopes', requires that the partial slopes exceed their standard errors by a minimum of a multiple of two. This "rough and ready" significance test tends to be very slightly more stringent than the .05 level conventionally employed.

[14]The unstandardized partial slope for retirement ($b_{YR \cdot ASFET}$) in the model is -.08. Thus, the CE demand rate is eight percentage points lower among citizens who call themselves retired than among all other citizens--independent of the effects of age (or ethnicity, sex, town size, or education). To the extent that repeal of compulsory retirement laws (or the increase in the age of compulsory retirement from 65 to 70 or older) reduces the number of people who consider themselves retired, we may expect substantial increases in demand for CE among Maine's elderly.

[15]The partial slope for the current participation variable ($b_{YC \cdot ASFERTPH}$) is .11. Thus, those currently participating are 11 percentage points more likely to desire CE in the near future than those not currently participating--even after controlling for the differences between the two groups with respect to the eight antecedent variables in the model.

[16]The unstandardized slope for Franco-American ethnicity is .069 in the model's final equation (nine variables), suggesting that when the effects of the other eight variables on demand are controlled, CE Survey respondents identifying as Franco-Americans produced a potential CE demand rate 6.9 percentage points higher than the rate for all others.

APPENDIX A

INTERVIEW SCHEDULE AND FREQUENCY DISTRIBUTIONS OF RESPONSES TO THE ADULT EDUCATIONAL AND EDUCATIONAL MEDIA INTERESTS SURVEY (SUMMER 1977)

Note: The frequency distributions entered in the interview schedule are based on the Survey's weighted cross-sectional sample of adult citizens of Maine from which all full-time students have been removed. This total number (N) of cases in this "non-student" sample is 1,719 when unweighted and 1,715 when weighted.

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Social Science Research Institute
164 College Avenue
University of Maine
Orono, Maine 04473

Tel. # 581-2555

STUDY #8007

SUMMER 1977

Area _____ Cluster _____

Interviewer _____

Date _____

Time Started _____

Time Finished _____

Interview # ____ of this cluster

TITLE I-A, HIGHER EDUCATION ACT

ADULT EDUCATIONAL AND EDUCATIONAL MEDIA INTERESTS SURVEY

INTRODUCTION: Hello, I'm _____ . I represent the Social Science Research Institute at the University of Maine. We are conducting a survey of adult residents of Maine and your household was randomly selected as part of a representative sample of all households in the state.

Are you year-round residents of this town?

Yes ↓

No → THANK R. DO NOT INTERVIEW

(Ask to speak with member of the household who is in the assigned quota group. If there are two eligible respondents in the household who are available for an interview, take the older in even-numbered clusters and the younger in odd-numbered clusters. If there are three eligible respondents available, take the one who is neither oldest nor youngest.)

MALE 18-44	FEMALE 18-44
MALE 45+	FEMALE 45+

ADULT EDUCATIONAL AND EDUCATIONAL MEDIA INTERESTS SURVEY

1. What are the most important problems or needs in your community? (Are there any others you can identity?)

   (See Addendum for frequency distribution of responses)

The first series of questions I'm going to ask has to do with your possible interest in further learning opportunities for yourself--that could help you in any way.

2. First, are you now taking part in any kind of learning activity?

   [1. Yes] 9.7% [5. No] 90.3% (N=1,714)

   (GO TO Q3)

   2a. What is it? (Probe type of activity and topic) (See Report, Table V-A,Q2A)

   2b. Where are you doing this? See Addendum

   2c. Are you a full-time student? [1. Yes] [5. No] 100.0% (N=162)

3. Within the next two years would you like to take part in some form of further learning activity?

   [1. Yes] 45.4% [5. No] 54.6% (N=1,714)

   (GO TO Q16)

4. What is the one subject, topic or skill that you would most like to study or learn more about?

   See Addendum

5. Are there any other areas you would like to study or learn more about?

   See Addendum

6. (HAND R CARD A) Here are some possible reasons for being interested in further learning. Which of these reasons would you consider important in your decision to pursue further learning?

		1. Important (%)		5. Not Important (%)	DK (%)
a. Meet new people, do something new	a.	55.6	. . . . .	44.4	
b. To work toward a degree	b.	31.6	. . . . .	68.4	
c. To learn something new, cultural enrichment; etc.	c.	64.0	. . . . .	35.9	.1
d. Personal satisfaction, personal happiness	d.	80.7	. . . . .	19.3	
e. Be a better parent, husband or wife	e.	45.8	. . . . .	54.2	
f. To deal more effectively with personal situations and problems	f.	54.6	. . . . .	45.2	.2
g. To learn more about how to solve community problems	g.	39.7	. . . . .	60.3	
h. To improve income	h.	59.4	. . . . .	40.6	
i. To prepare for a job (or a new job)	i.	53.3	. . . . .	46.7	
j. Job requirement, to perform the job better, to obtain a promotion	j.	45.0	. . . . .	54.5	.5
k. Other (specify) _____	k.	4.9	. . . . .	94.7	.3

(N=776-779)

7. (CARD B) Now turn to the next card. As you know, there are a number of ways people can study or learn. Which of the following ways are appropriate for you? (In view of your work and family commitments, life style, and so forth.)

		1. Appropriate (%)		5. Not Appropriate (%)	DK (%)
a. On-the-job training - employer sponsored	a.	51.7	. . . . .	48.1	.2
b. On-the-job training - union sponsored	b.	16.3	. . . . .	82.6	1.0
c. A combination of work experiences and instruction	c.	59.8	. . . . .	39.6	.6
d. Courses taught over television or radio at your home	d.	21.9	. . . . .	77.8	.3

	1. Appropriate (%)	Not 5. Appropriate (%)	(DK) (%)
e. TV assisted courses at your home, with periodic meetings with an instructor	e. 26.9	73.1	
f. Independent learning activities, in consultation with an instructor (including such things as extension courses)	f. 56.9	42.9	(.2)
g. Correspondence study at home	g. 27.0	73.0	
h. Correspondence study plus television or radio instruction at home	h. 21.0	78.8	(.2)
i. Private lessons	i. 31.0	69.0	
j. Traditional classroom setting	j. 66.5	33.2	(.3)
k. Other _____	k. 4.6	95.3	(.1)

(N=772-776)

7A-1. (If more than one selected) Which of those ways of learning would be more appropriate for you?

See Addendum

8. (CARD C) There are many places people can go to study or learn. Which of the following locations would you consider appropriate for your learning needs?

	1. Appropriate (%)	Not 5. Appropriate (%)	(DK)
a. At home	a. 46.8	53.1	(.1)%
b. At your place of work	b. 38.1	61.9	
c. A library, museum, YMCA, church, or other community ageacy	c. 40.8	59.2	
d. An adult learning center	d. 56.7	42.7	(.6)%
e. A high school	e. 48.9	51.1	
f. A private vocational, trade or business school	f. 44.8	55.2	
g. A community or junior college campus	g. 34.8	65.1	(.1)%
h. A private college or university	h. 40.1	59.9	/
i. A vocational technical institute	i. 42.2	57.7	(.1)%
j. A regional vocational center	j. 32.8	66.9	(.4)%
k. A University of Maine campus	k. 50.8	48.8	(.4)%
l. Other (specify)	l. 3.0	97.0	

(N=771-776)

9. (If more than one selected) Now, which of those locations would be most appropriate for you? See Addendum

9a. Why do you say this? See Addendum

10. Looking at Card D now, what would be the most important factor in your choice of a location for additional learning? (Check only one)

37.8% 1(a). Convenience, What kind of convenience do you mean? _____

38.5 2(b). Learning opportunities that I want are offered there

1.6 3(c). Reputation of the institution

7.0 4(d). Cost

11.0 5(e). Feel most comfortable with the people there--instructors and students

2.1 6(f). Prefer studying there the most

1.9 7(g). Other (specify) _____

100.0% (N=769)

11. How far would you be able to travel to take part in a learning activity, assuming that you would have to go there at least once a week? See Addendum miles.

12. What time of day would you prefer morning, afternoon, or evening?

27.9%	10.9	53.6	5.4	
1. morning	3. afternoon	5. evening	8. DK	(N=770)

13. Would you want to earn credit toward a certificate or degree for the study you are interested in doing?

64.3%	34.4	1.4	
+1. Yes	5. No	8. DK	(N=773)

(GO TO Q14)

13a. How important to you is receiving a certificate or degree, very important, important, or not too important?

37.8%	33.4	27.9	.9
1. Very important	3. Important	5. Not too important	8. DK

(N=501)

13b. What kind of degree or certificate would you want to earn? Please select one response from Card E. (Check only one.)

22.5% 01(a). A statement of satisfactory completion of the course or program, perhaps for use in job advancement

6.1 02(b). A public school credential (teaching, counseling, special education, etc)

20.3 03(c). Certificate or license needed for other specific occupation (beautician, electrician, real estate salesperson, etc.)

7.0 04(d). High school equivalency, GED

7.9 05(e). Two-year associate degree

14.1 06(f). Four-year college degree, Bachelors

12.9 07(g). Masters degree

5.0 08(h). Graduate or professional degree (Ph.D., MD, law degree, etc.)

2.3 09(i). Other degree or certificate (specify) _____

1.8 10(j). DK

(N=501)

13c. Would you need financial assistance for such a course?

56.2%	35.0	8.8	
1. Yes	5. No	8. DK	(N=503)

13d. On Card F are some amounts of money. What is the highest amount you would be able to pay for a course that meets three hours per week for roughly four months, or for some other educational activity that provides three units credit? (Check the one closest amount.)

13.5% 1(a). Am unable to pay anything for further education

16.2 2(b). $ 30

13.7 3(c). $ 60

20.2 4(d). $ 90

13.4 5(e). $120

4.6 6(f). $150

9.2 7(g). $180 or more

9.3 8(h). DK

(N=501)

14. About how many hours per week can you afford to devote to your learning activities? (meetings, travel, preparation)

15.6% 1(a). Less than five hours

36.6 2(b). 5-9 hours

25.8 3(c). 10-19 hours

12.0 4(d). 20-29 hours

3.0 5(e). 30-39 hours

4.9 6(f). 40 hours or more

2.1 7(g). DK (N=772)

15. Listed on Card H are various services that could be provided by an adult education program. Which of the services do you think you might be interested in using?

	1. Yes (%)	5. No (%)	DK (%)
a. A course or other program of learning	69.3 ☐	☐ 30.7	
b. Training in basic skills--reading, writing, arithmetic	15.4 ☐	☐ 84.6	
c. A place to study	21.0 ☐	☐ 79.0	
d. Discussion of educational and/or career plans with a staff member	30.9 ☐	☐ 68.8	.3
e. Education and career counseling	32.8 ☐	☐ 67.1	.1
f. Information about educational opportunities in the region--where to find learning opportunities, how to use libraries, museums, where to take equivalency exams; and so forth	36.2 ☐	☐ 63.4	.4
g. Evaluation of life experiences for possible college credit, including military experiences	23.4 ☐	☐ 76.5	.1
h. Testing to obtain advanced standing in a program of studies	32.0 ☐	☐ 67.2	.8
i. Testing of strengths and weaknesses in various subjects or skills	40.2 ☐	☐ 59.7	.1
j. Assessment of personal competencies--personal growth, potential for living a more productive life, and so forth	46.1 ☐	☐ 53.3	.6
k. Putting together a record of all learning activities and job experiences	34.9 ☐	☐ 64.3	.8

(N=770-773)

16. (CARD I) What would be important reasons why you might not engage in some kind of learning activity in the next two years? Which of these factors might prevent you from doing so?

		Might 1. Prevent (%)		Would not 5. Prevent (%)		DK (%)
a.	Cost	37.1	☐	62.8	☐	.1
b.	No location nearby where I might obtain the learning activity	26.3	☐	73.0	☐	.7
c.	Learning activities available generally don't seem useful or practical	22.5	☐	75.3	☐	2.2
d.	Learning activities available are not interesting to me	26.9	☐	71.7	☐	1.4
e.	Learning activities I want are not scheduled when I can attend	27.3	☐	70.1	☐	2.6
f.	Home responsibilities	32.5	☐	67.4	☐	.1
g.	Job responsibilities	29.4	☐	70.5	☐	.1
h.	Transportation problems	19.8	☐	80.1	☐	.1
i.	Child care problems	14.5	☐	85.4	☐	.1
j.	Don't know how to get enrolled, how to get information, and so forth	12.4	☐	87.5	☐	.1
k.	Teachers would not understand my learning needs and problems	4.1	☐	95.1	☐	.8
l.	Teachers would not understand my language or culture	1.5	☐	98.2	☐	.2
m.	No reason for further education; further learning would not help me much	23.9	☐	75.8	☐	.3
n.	Not enough energy or stamina	17.2	☐	82.6	☐	.2
o.	I probably could not do the work	10.6	☐	88.9	☐	.5
p.	I am too old to go back to school	31.9	☐	67.9	☐	.2
q.	Lack of interest in any more formal schooling	35.2	☐	64.6	☐	.2
r.	Other reason (specify) _____		☐		☐	

might prevent	1.7	Would not prevent	89.8
Sick/disabled	6.3	Not ascertained	0.1
No time	2.0		

(N=1,693-1,703)

TV VIEWING QUESTIONS

Now'd I'd like to ask you a few questions about local television.

17. Are you connected to a cable TV service?

34.2%	63.6	2.2	
1. Yes	5. No	7. No TV	(N=1,713)
		(GO TO Q25)	

18. On your TV set, can you receive a channel which is a "Public Broadcasting" or "Educational" channel, that's the one without commercials,(the Sesame St. channel)?

88.9%	2.8	8.3	
1. Yes	3. Not sure	5. No	(N=1,669)
↓	(GO TO Q25)	(GO TO Q25)	

19. What channel is that?

Channel #_____ or Call letters _____

Correct identification	96.0%
Incorrect, DK	3.1
Insufficient evidence	0.9
N=1,497	

20. Generally, how good is the picture you get on that channel? Would you say it is good, fair, or poor?

79.6%	15.8	3.7		
1. Good	3. Fair	5. Poor	DK=0.9	(N=1,482)

21. In the last week, have you personally seen any shows on that channel?

30.5%	2.2	67.3	
1. Yes	3. Not sure	5. No	(N=1,489)
↓	(GO TO Q22)	(GO TO Q22)	

21a. What show was that? See Addendum

22. In the last week, has anyone in your household seen any shows on that channel?

40.8%	51.2	8.1	
1. Yes	5. No	8. DK	(N=1,494)
↓	(GO TO Q23)		

Who? (Check all that apply.)

a. Children	70.3% 1. Yes	29.6 5. No	DK=0.1	(N=608)
b. Spouse	48.3 1. Yes	51.1 5. No	DK=0.6	(N=605)
c. Others	12.9 1. Yes	87.1 5. No		(N=603)

23. During the past four weeks, how many programs, shows, or episodes of shows would you say you personally have seen on public or educational television--a number of them, 3 or 4, 1 or 2, or haven't you seen any during the past four weeks?

1. A number	2. 3 or 4	3. 1 or 2	4. None	8. DK	
21.2%	15.9	20.5	40.0	2.3	(N=1,483)

24. How important is public TV to you and your family, very important, somewhat important, or not too important?

1. Very important	2. Somewhat	3. Not too	8. DK	
30.2%	38.0	31.2	0.6	(N=1,483)

25. Do you think educational TV programs can be important teaching and learning tools?

1. Yes	3. Depends	5. No	8. DK	
90.1%	3.9	2.2	3.8	(N=1,708)

26. Do you tend to approve of children watching educational TV in school on the grounds that it is a good way for them to learn, or tend to disapprove on the grounds that they watch too much TV at home and should not watch in school?

1. Approve	5. Disapprove	8. DK	
75.6%	14.8	9.6	(N=1,707)

27. Do you think that state and local tax money allocated for education should be spent in part on television as a teaching and learning tool?

1. Yes	5. No	8. DK	
71.2%	17.8	11.0	(N=1,702)

Now I'd like to ask you a few questions about radio.

28. Do you have an FM radio in your home?

1. Yes	5. No		
86.2%	13.6	DK=0.2	(N=1,713)

29. Do you have an FM radio in your car?

1. Yes	5. No		
34.7%	64.7	DK=0.6	(N=1,713)

(IF NO TO BOTH Q28 AND Q29, GO TO Q36)

30. On your radio, is there any station that is a "public broadcasting station", national public radio, or "educational station"?

16.9%	42.9	40.2	
1. Yes	5. Not sure	5. No	(N=1,501)
↓	(GO TO Q36)	(GO TO Q36)	

31. What station is that? (N=245)

23.8% of correctly named call Number on dial _____ or Call letters _____ letters, or city or dial location of public radio station

76.2% could not correctly name that station

32. Generally, how good is the reception you get on that station? Would you say it is good, fair, or poor?

85.8%	5.3	2.6		
1. Good	3. Fair	5. Poor	DK=6.3	(N=249)

33. In the last week have you listened to programs on that station?

50.0%	3.9	46.1	
1. Yes	3. Not sure	5. No	(N=248)
↓	(GO TO Q34)	(GO TO Q34)	

33a. What program was that? See Addendum

34. In the last week, has anyone in your household listened to any programs on that station?

32.9%	54.2	12.9	
1. Yes	5. No	8. DK	(N=248)
↓	(GO TO Q35)		

Who? (Check all that apply.)

a. Children	32.0% 1. Yes	67.0 5. No	DK=.9	(N=86)
b. Spouse	65.6 1. Yes	33.5 5. No	DK=.9	(N=86)
c. Others	21.1% 1. Yes	78.0 5. No	DK=.9	(N=86)

35. How important is public radio to you and your family, very important, somewhat important, or not too important?

29.5%	37.8	32.7
1. Very Important	3. Somewhat Important	5. Not too important

(N=248)

(If has public radio or TV)

36. (CARD J) Which of these kinds of programs do you wish Public TV or radio would carry or schedule more of?

	1. Yes (%)	5. No (%)	(DK) (%)
a. Public affairs programs	49.5	49.4	1.1
b. Entertainment programs	45.5	53.3	1.2
c. How-to-do-it programs	59.3	40.0	.7
d. College credit programs	31.5	65.6	3.0
e. Elementary/Secondary school instructional programs	41.5	56.1	2.3
f. Concerts	40.1	59.2	.7
g. Drama	41.5	57.8	.7
h. Historical programs	68.5	30.4	1.1
i. Scientific programs	56.2	42.8	1.0
j. Children's programs	56.0	42.7	1.2
k. Other	6.4	87.5	0.4

(sports, 2.5%; documentaries, specials, 0.9; religious, 0.7; and travelogues, nature shows, etc., 1.6) (N=1,567-1,579)

37. Would you take a college course for credit based on a radio series or a TV series if it were available in your area for a small tuition charge?

1. Yes, radio	2. Yes, TV	3. Yes, both	4. Depends on time	5. No	8. DK
0.7%	20.8	5.8	1.3	67.7	3.7

(GO TO Q38) (N=1,714)

37a. What topic would you like a course on? See Addendum

37b. What time of day would you prefer, morning, afternoon, or evening?

1. Morning	3. Afternoon	5. Evening	8. DK
22.3%	14.5	58.4	4.0

Multiple responses 0.9 (N=490)

38. Do you think more college credit courses should be offered on radio or TV?

1. Yes	5. No	8. DK
55.9%	23.0	21.1

(N=1,706)

39. Do you enjoy watching or listening to programs which have a phone-in follow-up where you can get more information on the subject?

1. Yes	5. No	8. DK
54.9%	33.1	12.0

(N=1,711)

40. If they were available, would you use information pamphlets that supplement radio or TV programs dealing with subjects like history, gardening, sewing, etc.?

1. Yes	5. No	8. DK
66.2%	28.9	4.9

(N=1,713)

41. In Maine about 86¢ per person per year of state taxes helps support public radio and television. Do you strongly approve, approve, disapprove, or strongly disapprove this use of state taxes for public broadcasting?

1. Strongly Approve	2. Approve	3. Disapprove	4. Strongly Disapprove	8. DK
23.5%	59.7	9.2	1.2	6.4

(N=1,711)

42. About 25% (¼) of public radio and television budgets comes from public fund raising. Do you strongly approve, approve, disapprove, or strongly disapprove of fund raising done on your local public radio and TV stations?

1. Strongly Approve	2. Approve	3. Disapprove	4. Strongly Disapprove	8. DK
17.3%	64.4	10.9	0.6	6.8

(N=1,708)

43. Do you currently subscribe or contribute money to your public radio station or public TV station?

1. Yes, radio	2. Yes, TV	3. Yes, both	5. No	DK=0.1
0.5%	12.4	1.2	85.8	

(N=1,709)

Finally, I'd like to ask a few questions about yourself.

44. What is your age?

	(%)		(%)		(%)
65 and over	22.9	35 - 44	16.6	45 - 54	14.3
25 - 34	21.8	55 - 64	14.5	18 - 24	9.9

(N=1,705)

45. (CARD K) To which, if any, of these ethnic groups on Card K do you belong?

		(%)
1(a).	Irish-American	13.3
2(b).	Franco-American	16.9
3(c).	Italian-American	2.1
4(d).	American Indian	0.6
5(e).	Black American	0.1
6(f).	Latin American, Mexican	0.2
7(g).	Other _____	6.1
8.	None	52.5
9.	No response, DK	
0.	English-American	8.2

(N=1,680)

46. What was your last completed grade in school?

16.0	1.	8th grade or lower	5.	3 years college	3.2%
15.0	2.	9th-11th	6.	Completed college	10.8
36.6	3.	12 (completed high school)	7.	College advanced degree	4.3
14.1	4.	1-2 years college, business or technical school	8.	Other _____	100.0%
			9.	NA	(N=1,713)

47. Are you currently married, widowed, divorced, separated, or single?

71.0%	12.8	4.2	1.6	10.3
1. Married	2. Widowed	3. Divorced	4. Separated	5. Single

(N=1,711)

48. What is the total number of people in your household? _____

One..... 13.7 Three.....16.8 Five.....11.5 Seven.....2.4 (N=1,707)
Two..... 29.4 Four.....18.8 Six..... 5.8 Eight or more...1.6

49. Do you work full-time, part-time, are you looking for work, or what?

39.0%	9.6	4.8	25.8
1. Full-time	2. Part-time	3. Looking	4. Retired/Disabled

19.4	0.2	1.2	
5. Housewife	6. Military	7. Other	

(N=1,709)

50. (IF WORKING) What is your job title? See Addendum

51. Is anyone in your household handicapped? 11.7% 1. Yes 88.3 5. No (N=1,705)

51a. What kind of handicap is it? See Addendum

52. How long have you lived in Maine? See Addendum years

53. (CARD L) In order to understand the needs of people like yourself, we would like to know roughly what your total family income was in 1976. Would you please tell me the letter on Card L that indicates how much income you and your family received from all sources during last year, 1976, before taxes or any deductions?

10.5%	1(a).	Under $ 3,000	5(e).	$10,000-$14,999	23.1%
11.7	2(b).	$ 3,000-$ 4,999	6(f).	$15,000-$19,999	14.9
9.5	3(c).	$ 5,000-$ 6,999	7(g).	$20,000 and over	14.4
14.3	4(d).	$ 7,000-$ 9,999	9.	No response	
			8.	DK	1.7

(N=1,436)

54. Interviewer Code Respondent's Sex

49.5%	50.5
1. Male	5. Female

(N=1,1710)

Respondent's Race

99.4%	0.1	0.3		0.1
1. White	2. Black	3. American Indian	4. Oriental	5. Other

(N=1,708)

Enter time finished on coversheet. Obtain name, address, and telephone number for validation.

Thank you.

Addendum to APPENDIX A:
Frequency Distribution of Responses to Open-Ended Questions in Adult Educational and Educational Media Interests Survey (State-wide Sample)

Question #1 (First Response Only)

Recreational facilities and programs for young people needed, and more cultural activities	16.4%
More police and fire protection and reduction of juvenile delinquency and other crime problems	9.8
Unemployment problem; need more industry	8.3
Quality education and educational opportunities needed	7.2
Better roads; better maintenance and solution for traffic problems	7.0
Housing, financial, and medical services for elderly and better public transportation	5.7
Taxes too high	4.8
Refuse and disposal problems with sewerage, garbage, etc	2.4
Better town government and better town officials	2.0
Inflation; high cost of living	1.6
Need higher moral values	.9
Public apathy and interest in community interaction needed	.9
Lack of shopping facilities	.8
Dog control problem	.5
Other	6.3
No problems	16.6
Don't know	8.8
(N=1,691)	100.0%

Question 2b

Private home	31.8%
University of Maine	15.1
On-the-job	13.3
Other College	10.3
High School	7.8
Bible School	4.6
Vocational	3.1
Other	14.0
(N=139)	100.0%

Question #4

Business	18.2%
Social Sciences and Humanities	14.6
Arts and Crafts	11.6
Health related	7.3
Sciences	6.8
Building trades	6.6
Fine Arts	5.8
Education	5.3
Mechanics	3.2
Horticulture	2.4
Electronics	1.7
High School, G.E.D.	1.6
Law	1.4
Vocational: Operative and Craftsmen	1.3
Religious study	1.1
Sports and hobbies	1.0
Vocational: Beauty & Barber service	1.0
Social Services	.9
Architecture	.7
Learn to drive	.7
Broadcasting	.6
Human development	.5
Vocational: Heating, Air Conditioning and Refrigeration	.5
Protective services	.4
Home Economics	.3
Navigation	.3
General education	.2
Vocational: other	.2
Flying lessons	.1
Trapping and fishing	.1
Boat building	0.0
Other	1.3
Don't know	2.1
(N=772)	100.0%

Question #5

Social Sciences and Humanities	16.8%
Business	13.8
Arts and Crafts	12.6
Building trades	8.8
Fine Arts	7.7
Health related	6.2
Sciences	5.6
Education	5.2
Mechanics	4.8
Horticulture	3.3

Question #5 continued

Sports and Hobbies	2.1%
Law	1.5
General education	1.3
Electronics	1.2
Home Economics	1.2
Learn to drive	.9
Vocational: Operative and Craftsmen	.8
Religious study	.7
High School, G.E.D.	.6
Social Services	.5
Vocational: Beauty & Barber services	.5
Flying lessons	.4
Human Development	.4
Trapping and Fishing	.4
Vocational: Other	.4
Boat building	0.0
Broadcasting	0.0
Other	.2
Don't know	2.1
(N=467)	100.0%

Question 7-A-1

Classroom	29.9%
On-the-job-employer sponsored	22.4
Combination work and instruction	15.0
Independent and consultation with instructor	11.5
Correspondence at home	5.2
TV with instructor	3.4
Private lessons	3.0
TV or Radio	2.2
Correspondence with TV or radio	1.8
On-the-job-union sponsored	1.7
Other	3.4
Don't know	.5
(N=749)	100.0%

Question #9

University of Maine	20.3 %
At home	16.8
At work	12.7
High School	10.6
Vocational technical institute	9.9
Adult learning center	8.7
Private college or university	6.1
Agency	4.8
Private vocational, trade or business school	3.2
Regional vocational center	2.6
Junior or community college	1.8
Other	1.0
Don't know	1.4
(N=758)	100.0%

Question #9a

Convenience	39.5%
Programs there	23.5
Learn by doing	8.8
Facilities	6.4
Reputation	4.1
Cost	.6
Other	7.5
Don't know	9.5
(N=664)	100.0%

Question #11

Less than 5	7.6%
5 - 9	8.8
10 - 19	22.7
20 - 29	23.7
30 - 39	10.5
40 - 49	5.2
50 or more	21.6
(N=754)	100.0%

Question #21a

Sesame Street, Zoom, Electric Company, Mr. Rogers	17.0%
Masterpiece Theater	9.4
Boston Pops	7.6
Crockett's Victory Gardens	4.4
Movies and plays (no specific response)	4.3
MacNeil Lehrer	4.1
Nova	4.0
Opera, concerts, "music specials" (No specific response)	4.0
Sports shows (tennis, soccer, etc.)	2.8
News, news programs	2.5
Once Upon A Classic	1.6
Wall Street Week in Review	1.4
Theater in America	1.2
Washington Week in Review	1.2
Austin City Limit	0.4
Consumer Survival Kit	0.2
Monty Python	0.0
Other	20.7
Don't know	13.1
(N=447)	100.0%

Question 33a

Morning ProMusica	18.4%
Music: classical jazz, folk, etc	18.2
News, news program	11.3
Jazz w/ Susan Tibbetts	3.0
Metropolitan Opera	2.7
All things considered	1.5
Morning Magazine	1.5

Question 33a continued

Spiders Web	0.7%
Afternoon Evening Concert	0.0
Maine things considered	0.0
Options	0.0
Reading aloud	0.0
Roots and branches	0.0
Other	15.5
Don't know	27.3
(N=118)	100.0%

Question 37a

Social Sciences and humanities(philosophy, languages, etc.)	27.5%
Business, business related areas	15.9
Sciences, engineering, mathematics and electronics	10.8
Fine arts (music, drama,art)	8.2
Health, first aid courses, nursing	7.5
Arts and crafts	6.2
Education, teaching course	4.8
Building construction trades	4.6
Other	14.5
(N=428)	100.0

Question #50

Retired, housewives 55 and over, permanently disabled	31.0%
Misc. groups, housewives under 55, students, armed forces	15.0
Laborers and service workers	11.6
Professional, technical and kindred workers	9.2
Operatives and kindred workers	7.6
Clerical and sales workers	7.3
Craftsmen, foremen, and kindred workers	5.3
Unemployed	5.1
Manager, officials	3.7
Self-employed businessmen/artisans	2.7
Farmers and farm managers	0.8
Can't tell by response	0.7
(N=1,684)	100.0%

Question 51a

Mobility problems, arthritis, paralysis, leg disabilities	23.2%
Heart, heart related problems, stroke, heart attacks	18.3
Hearing problems, deaf	10.3
Visual problems, blindness	8.8
Mentally retarded	7.4
Breathing problems, emphysema, bronchitus, lung problems	4.5
Back problems	4.4
Other	23.2
(N=196)	100.0%

Question #52

Less than 5	6.4%
5 - 9	5.2
10 - 14	3.6
15 - 19	4.1
20 - 29	17.1
30 - 39	16.0
40 or more	47.6
	100.0%